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PHOTOGRAPHIC INTERPRETATION REPORT



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SOUTHEAST ASIA ACTIVITY REPORT

POL FACILITIES NORTH VIETNAM

Declass Review, NIMA/DoD

NPIC/R-218/66

JULY 1966

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DIA review(s) completed.

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3	12	69	CRS/DLB														

CORRECTION TO R-218/66 6 Sept. 1966

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INTRODUCTION

This report has been prepared in cooperation with CIA and DIA to include CIA/ORR and the DIA Production Center validation of published estimated storage in categories A and B. It is designed to present a comprehensive view of the POL storage and handling facilities in North Vietnam. It is not necessarily all-inclusive, inasmuch as the source of information is limited primarily to photography. As new storage areas are identified, or as changes occur in previously reported areas, periodic supplements will be disseminated, keeping the North Vietnam POL storage data base as current as possible.

Storage areas in this report are divided into four categories, each presented in a separate section.

Category A. Permanent Storage and Handling Areas. These areas consist of conventional, large, aboveground, cylindrical tank and related handling facilities and will occasionally include some underground storage, as appropriate.

Category B. Dispersed Storage Areas. These areas consist of semi-permanent, widely-dispersed storage, usually consisting of 7-MT-type, 12-MT-type, or 25-MT-type tanks placed in underground bunkers.

Category C. Drum Storage Areas. These areas consist of non-permanent, aboveground, open storage of US 55-gallon or US 30-gallon-type drums.

Category D. Miscellaneous. This category includes POL storage, transporta-

tion, and other related miscellaneous facilities not covered in other categories. Transshipment and handling facilities not located at regular storage areas are contained in this category.

A table of contents is included for each category and a small-scale plot map is included for each of the first three categories. In addition, a large-scale map and photo is provided for each item.

Annex I, prepared by the DIA Production Center, is divided into sections XA and XB, corresponding to Categories A and B. These sections contain detailed target analyses of the POL storage and handling facilities. Included in the descriptions is information on the significance and capacities of the facilities, target and defense environments, probable impact upon North Vietnam if destroyed, length of time required for restoration, and results of air strikes.

For purposes of this report, a large POL tank refers to a 25-MT tank, a standard POL tank refers to a 12-MT tank, and a small POL tank refers to a 7-MT tank. POL drums refer to standard US 55-gallon-type drums, unless otherwise stated. Reference to tank alone in the text describing category B facilities is used when referring to 12-MT tanks.

The type of photography used to provide information for this report generally precludes detailed mensuration; therefore, capacities are necessarily provided as estimated capacities.

All installations reported are indexed by geographic coordinates in ascending order at the end of the report.

In accordance with standard practices of the petroleum industry, capacities in all categories of this report are expressed in terms of metric tons at the rate of one metric ton for each cubic meter of volume. A cubic meter of water (about 265 US gallons) weighs one metric ton. A cubic meter of petroleum generally weighs less than one metric ton, the exact weight depending upon the specific gravity of the particular type of petroleum. A specific gravity of 0.84 may be used to estimate the weight of a cubic meter of average petroleum (see Annex II); thus, one cubic meter of average petroleum would weigh 0.84 metric tons. Capacities shown in this report are gross. Because of "deadwood" inside tanks, (e.g. the space occupied by pipes, manholes, and internal structural supports, and space left to preclude spillage at or near the tops of tanks), the actual and safe capacity may be about 95 percent of gross capacity.

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BACKGROUND

The economy of North Vietnam is predominantly agricultural, with only a limited amount of industry. Reports from the limited surveys conducted by the Ministry of Industry, North Vietnam, have made no reference to discoveries of crude oil, or natural gas, and the geological prospects for such discoveries are not favorable. Small deposits of oil shale are located in several of the anthracite coal areas; however, North Vietnam has no facilities for the processing of this resource. There are no refineries for processing natural crude oil or natural gas; therefore, all petroleum products must be imported. The petroleum facilities of North Vietnam are now limited to those required to receive, store, and distribute imported refined products.

There are no known pipelines in North Vietnam. Petroleum products received in the port of Hai Phong by tanker are distributed by tank car, tank truck, truck, river craft, and coastal vessel to other storage areas. Products are probably then distributed to consumers in drums or other packaged form. Consumption restraints on petroleum products are therefore, directly related to the amount which can be stored in any given area.

Essentially all POL storage prior to 1964 was located in permanent storage areas (Category A) such as Hai Phong, Ha Noi (Thanh Am) and Vinh. These three areas accounted for 70 percent of North Vietnam bulk storage capacity prior to 1964. The first two U.S. strikes against POL storage facilities were directed

against the Vinh Petroleum Products Storage in [] respectively. Shortly thereafter, in [] the first photographic evidence became available depicting the North Vietnamese commencing their initial POL dispersal program with the storing of cylindrical tanks in earth-covered bunkers. All of the dispersed sites (Category B) have been, or probably will be, concealed by one or more methods. Concealment methods observed to date include locating the site in an existing graveyard (a technique causing it to appear to be a burial ground) applying disruptive paint on the tanks, utilizing existing terrain features such as tree lines to conceal tanks, and planting over buried or semi-buried tanks to make them blend in with surrounding field patterns. Also in [] North Vietnam began utilizing numerous open storage areas for 55-gallon drums (Category C).

In 1964, North Vietnam had approximately ten POL storage areas; however, by [] at least 75 POL storage areas had been identified. This number does not include numerous small drum storage areas.

It is anticipated that continued and expanded efforts by the United States to destroy known POL storage areas will force North Vietnam to disperse and conceal POL stores to an even greater extent; thus, possibly making it more difficult to locate and strike these dispersed areas, but also further complicating the problem of POL distribution for North Vietnam.

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A

CATEGORY A.

**PERMANENT STORAGE
AND HANDLING FACILITIES**

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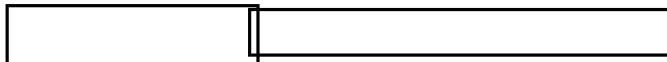
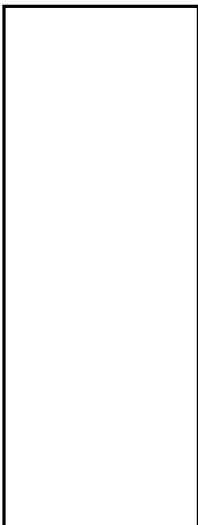


TABLE OF CONTENTS CATEGORY A

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<u>BE No.</u>	<u>Installation Name</u>	<u>Page Nos.</u>
	Viet Tri Petroleum Products Storage	A1, A2
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	Phuc Yen Petroleum Products Storage NNE Underground	A5, A6
	Ha Noi Petroleum Products Storage Thanh Am	A7, A8
	Nguyen Khe Petroleum Products Storage	A9, A10
	Bac Giang Petroleum Products Storage	A11, A12
	Nam Dinh Petroleum Products Storage	A13, A14
	Hai Phong Petroleum Products Storage	A15, A16
	Duong Nham Petroleum Products Storage Underground	A17, A18
	Do Son Petroleum Storage	A19, A20
	Phu Van POL Storage	A21, A22
	Vinh Petroleum Products Storage	A23, A24
	Phu Qui Petroleum Products Storage	A25, A26
	Hanoi/Gia Lam Airfield POL Storage Area	A27, A28

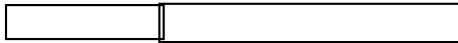
CONFIDENTIAL



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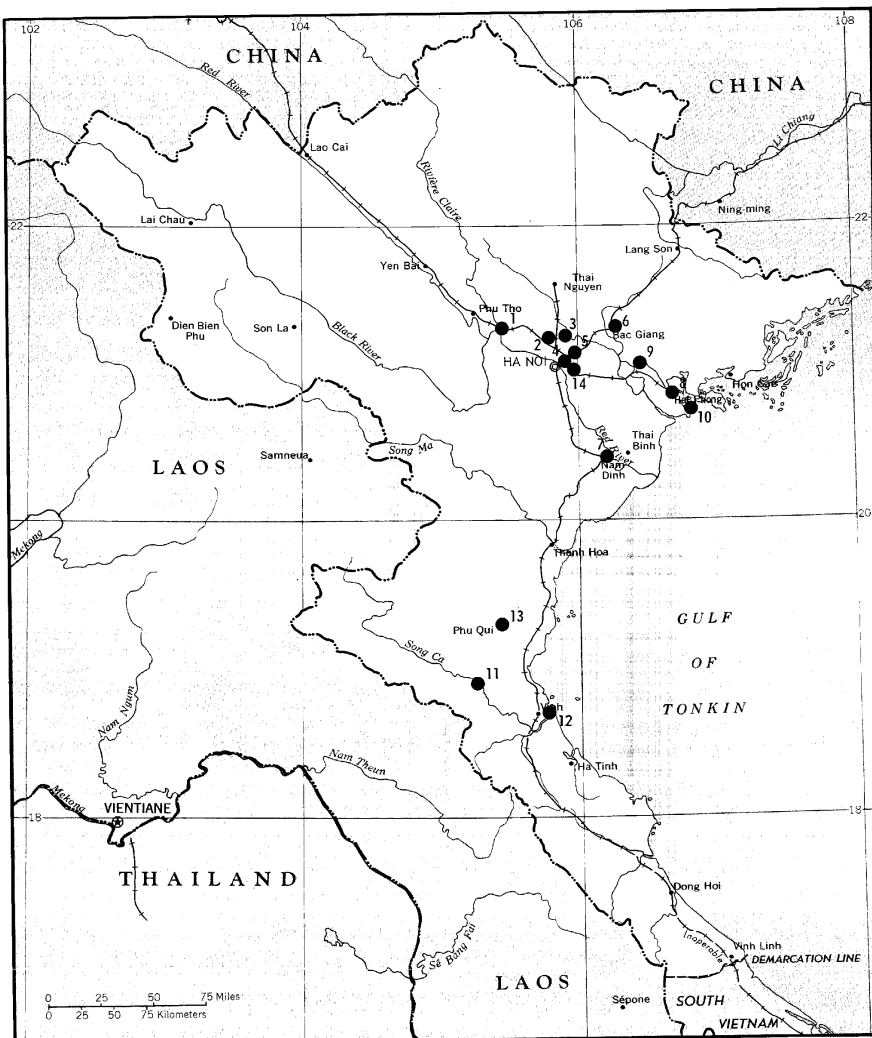
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**KEY TO CATEGORY A
PERMANENT STORAGE AND HANDLING AREAS**

1. Viet Tri Petroleum Products Storage
2. Phuc Yen Airfield POL Storage Area
3. Phuc Yen Petroleum Products Storage NNE UG
4. Ha Noi Petroleum Products Storage Thanh Am
5. Nguyen Khe Petroleum Products Storage
6. Bac Giang Petroleum Products Storage
7. Nam Dinh Petroleum Products Storage
8. Hai Phong Petroleum Products Storage
9. Duong Nham Petroleum Products Storage Underground
10. Do Son Petroleum Storage
11. Phu Van POL Storage
12. Vinh Petroleum Products Storage
13. Phu Qui Petroleum Products Storage
14. Ha Noi/Gia Lam Airfield POL Storage Area



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BE NUMBER

WJ453547
UTM COORDINATES

2117N 10526E
GEOGRAPHIC COORDINATES

NAME: VIET TRI PETROLEUM PRODUCTS STORAGE

25X1D

LOCATION: IMMEDIATELY SOUTH OF VIET TRI AT THE CONFLUENCE OF THE RED AND
CLAIRE RIVERS, 28 NM NW OF HA NOI

DESCRIPTION: SITE CONSISTS OF 3 MEDIUM AND 4 SMALL STORAGE TANKS AND 2 UNDER-
GROUND TANKS.

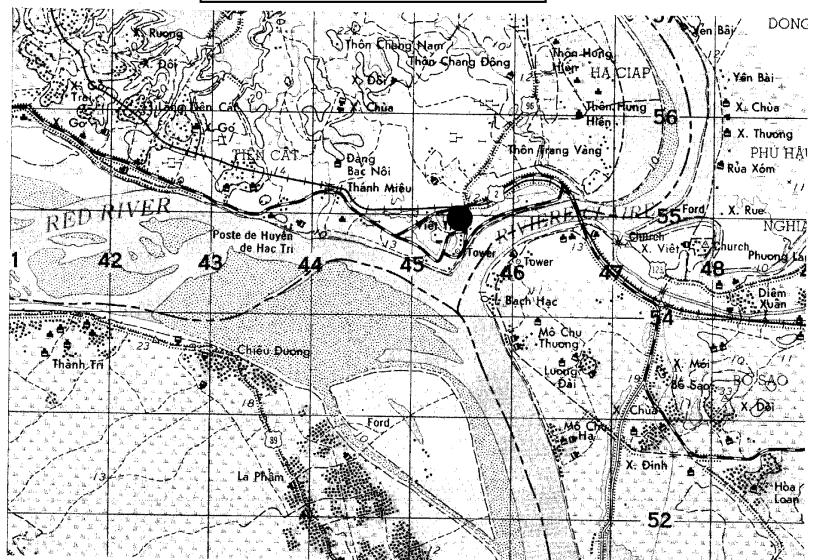
25X1D

ESTIMATED CAPACITY: TANK 1,670 MT, EXCLUSIVE OF UNDERGROUND TANKS

MAP REFERENCES: AMS SERIES L701, SHEET 6074 I, 1ST ED, JUN 65 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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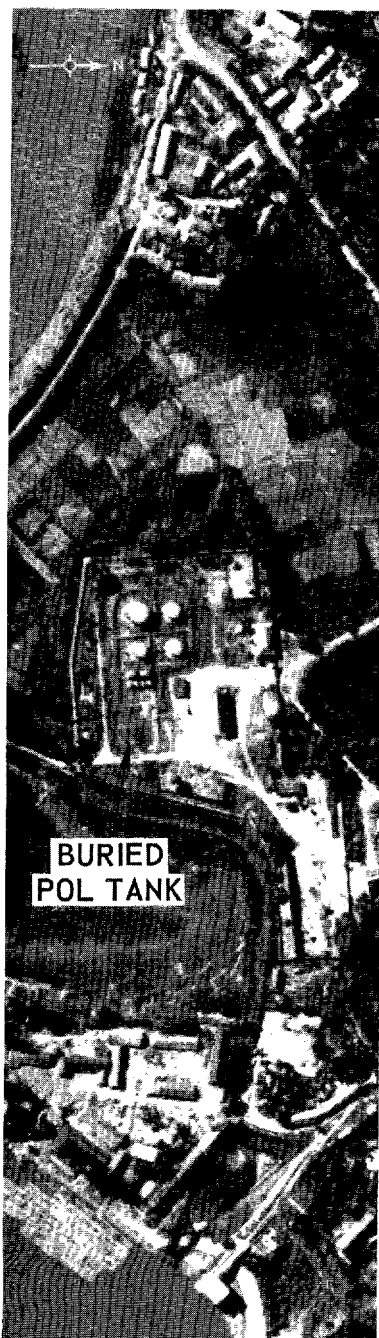
VIET TRI PETROLEUM PRODUCTS STORAGE

WJ453547

2117N 10526E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

WJ836482
UTM COORDINATES

2114N 10548E
GEOGRAPHIC COORDINATES

NAME: PHUC YEN AIRFIELD POL STORAGE AREA

25X1A

LOCATION: 0.8 NM NORTH OF PHUC YEN AIRFIELD

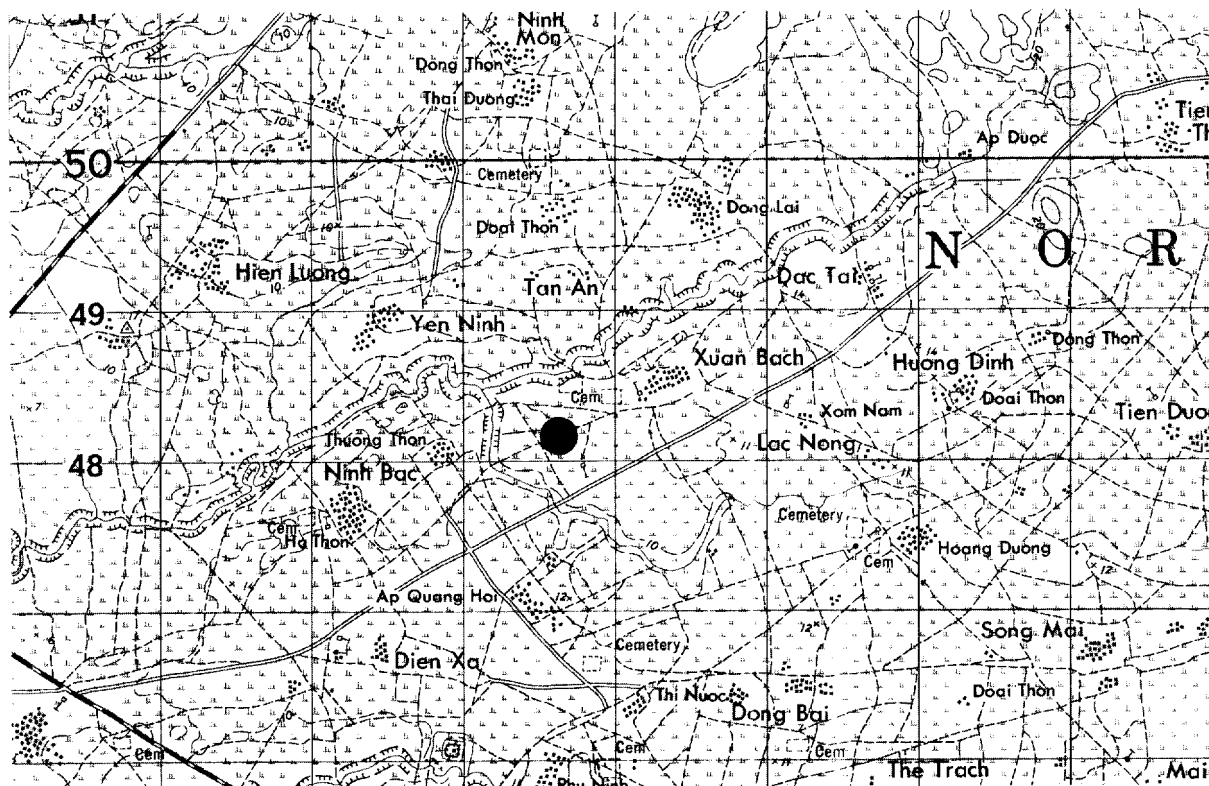
DESCRIPTION: FACILITY CONTAINS 3 LARGE CYLINDRICAL UNDERGROUND TANKS, 3 BUNKERED PROBABLE POL TANKS, AND 7 SUPPORT BUILDINGS. AREA IS CONNECTED TO PHUC YEN AIRFIELD BY AN ALL-WEATHER ROAD.

ESTIMATED CAPACITY: TANK 4,200 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174-I, 3D ED, DEC 59 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

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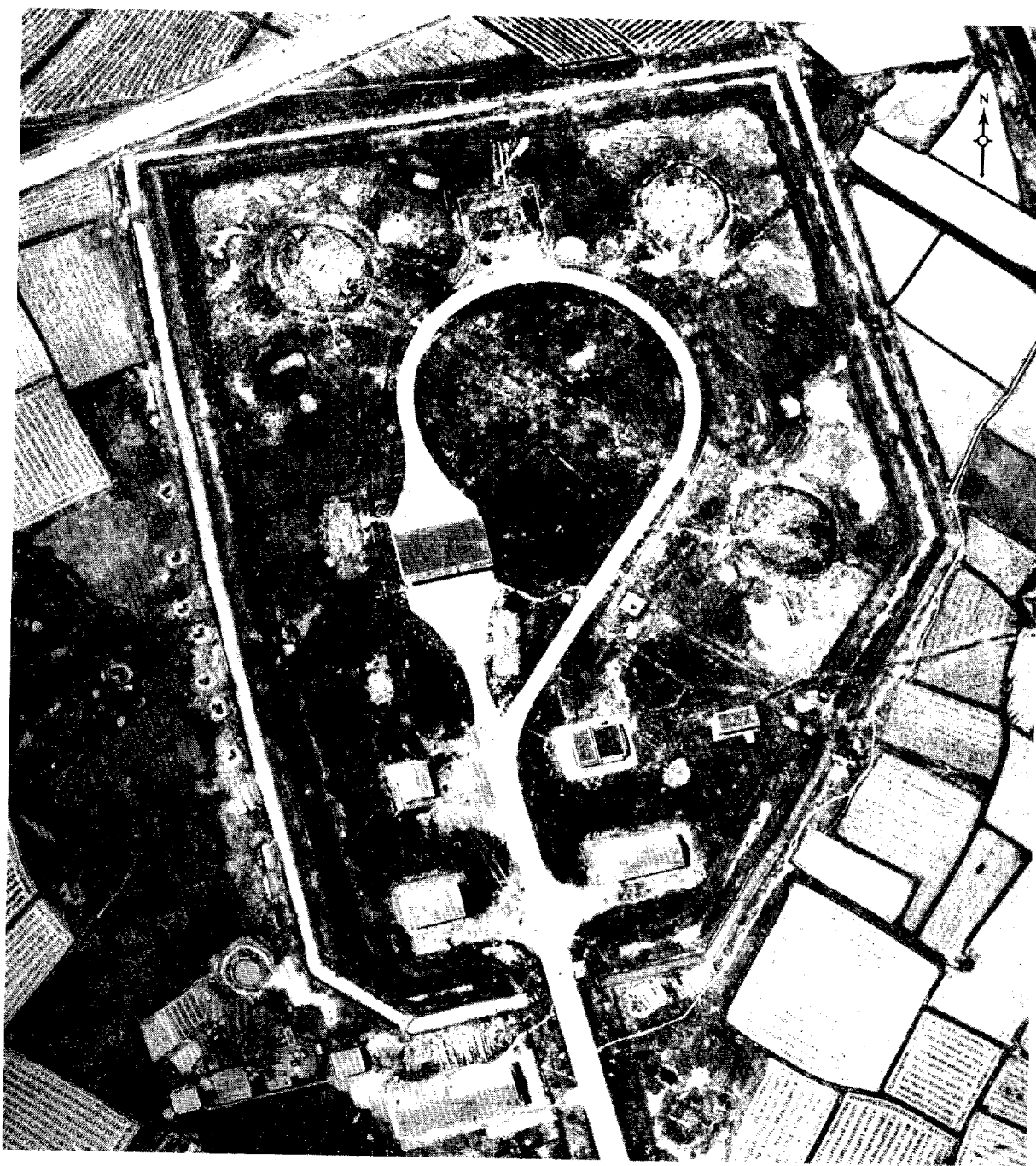
PHUC YEN AIRFIELD POL STORAGE AREA

WJ836482

2114N 10548E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

WJ868519
UTM COORDINATES

2116N 10550E
GEOGRAPHIC COORDINATES

NAME: PHUC YEN PETROLEUM PRODUCTS STORAGE NNE UG

LOCATION: 3.4 NM NNE OF PHUC YEN AIRFIELD

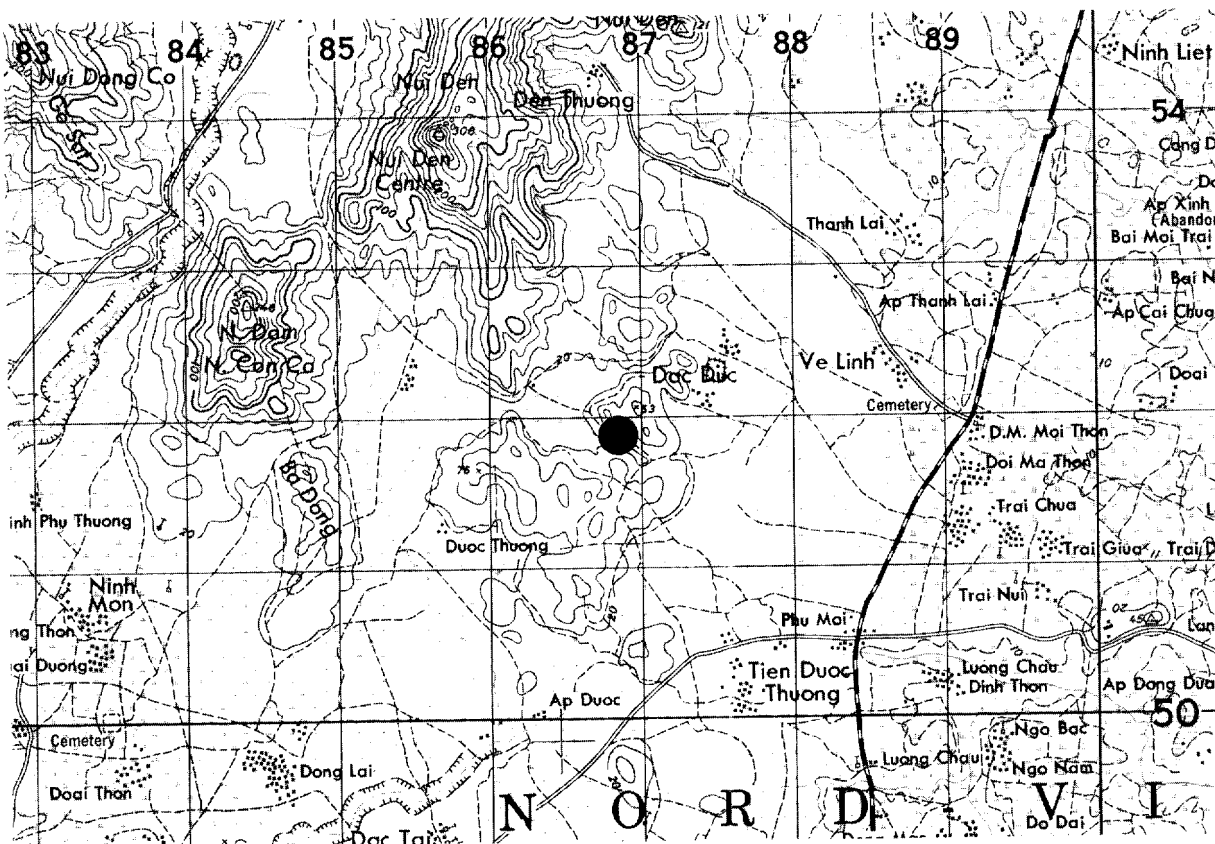
DESCRIPTION: FACILITY CONTAINS 9 PARTIALLY BURIED CYLINDRICAL TANKS DIS-
 PERSED AMONG SMALL HILLS AND 8 BUNKERED SMALL HORIZONTAL TANKS.

ESTIMATED CAPACITY: TANK 11,800 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174-I, 3D ED, DEC 59 (U)
 AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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PHUC YEN PETROLEUM PRODUCTS STORAGE NNE UG

WJ868519

2116N 10550E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

WJ932294

UTM COORDINATES

2103N 10553E

GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS STORAGE THANH AM

LOCATION: 3.7 NM NE OF HA NOI AND IMMEDIATELY SW OF THANH AM

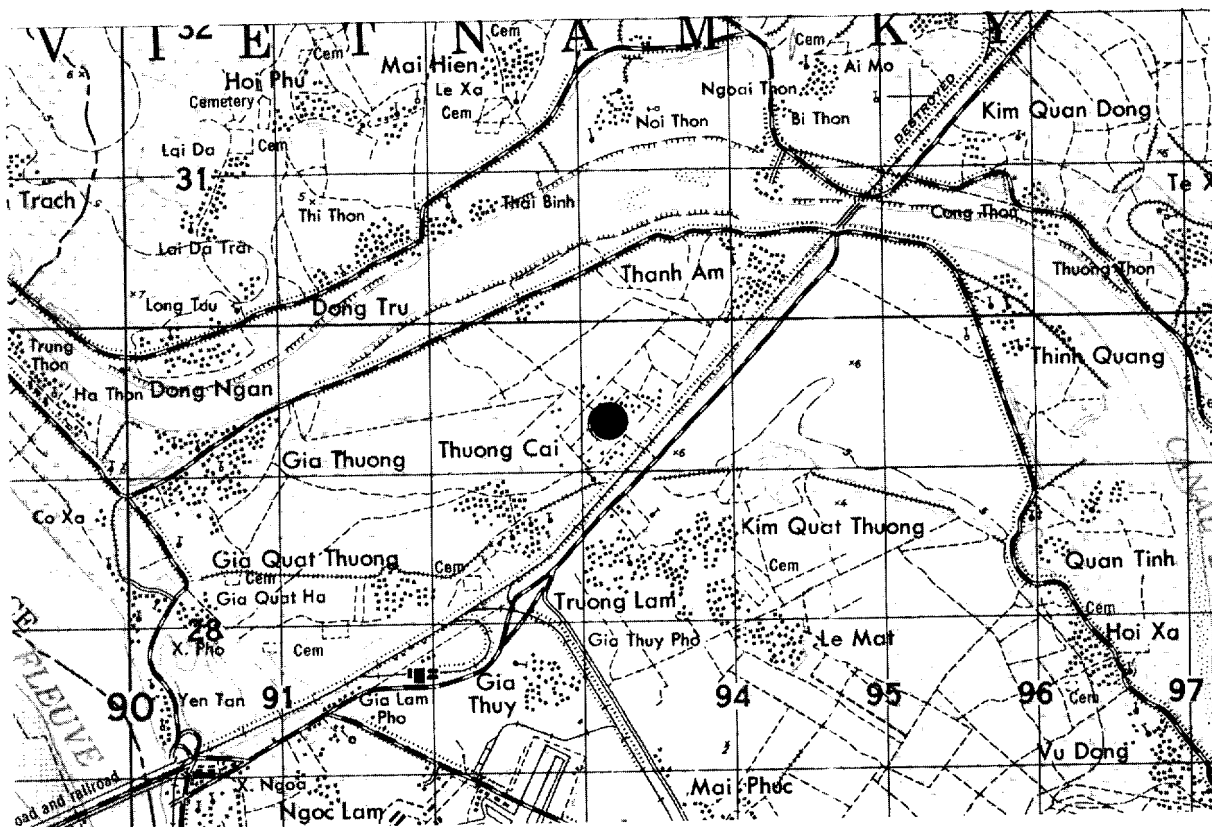
DESCRIPTION: PRIOR TO STRIKE OF 29 JUN 66, FACILITY CONSISTED OF AT LEAST 32 ABOVEGROUND TANKS OF VARIOUS SIZES, 2 SMALL HORIZONTAL TANKS, AND 8 BLIMP TANKS WITH A TOTAL CAPACITY OF 36,453 MT POST-STRIKE PHOTOGRAPHY OF [REDACTED] REVEALS ALL STORAGE TANKS TO BE TOTALLY DESTROYED OR DAMAGED.

ESTIMATED CAPACITY: NEGLIGIBLE

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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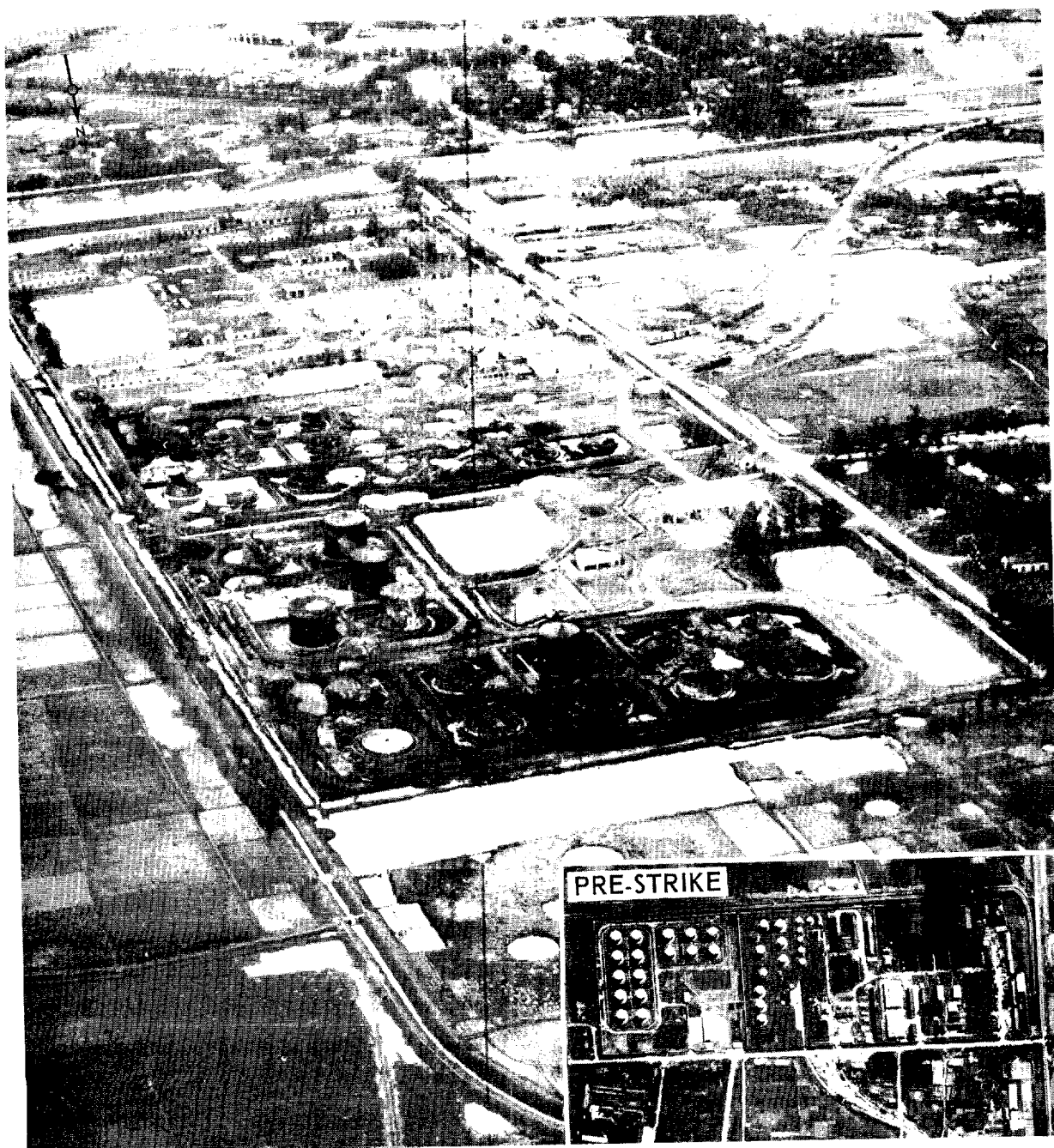
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HA NOI PETROLEUM PRODUCTS STORAGE THANH AM
WJ932294 2103N 10553E
UTM COORDINATES GEOGRAPHIC COORDINATES



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WJ892408
UTM COORDINATES

2110N 10551E
GEOGRAPHIC COORDINATES

NAME: NGUYEN KHE PETROLEUM PRODUCTS STORAGE

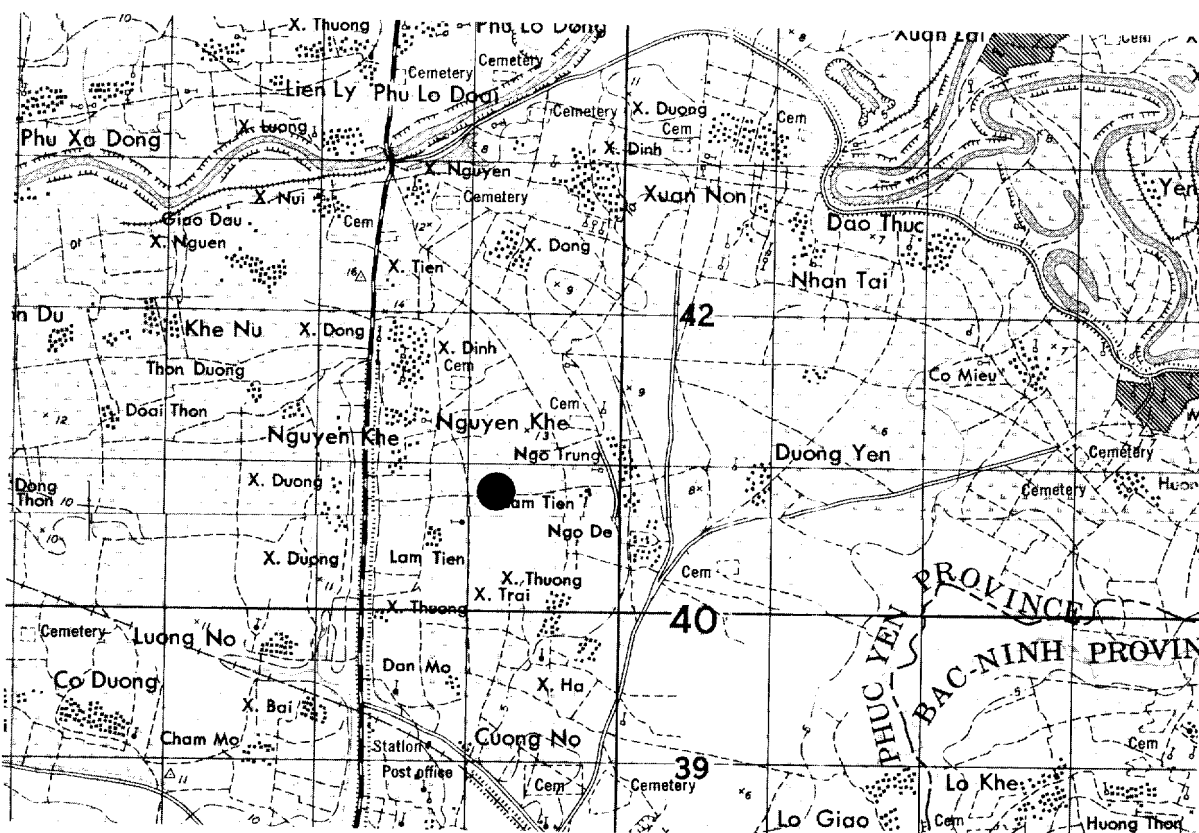
LOCATION: 0.4 NM SE OF NGUYEN KHE AND 8.3 NM NORTH OF HA NOI

DESCRIPTION: PRE-STRIKE PHOTOGRAPHY OF [REDACTED] REVEALS 4 ABOVEGROUND VERTICAL TANKS, 9 BURIED/BUNKERED VERTICAL TANKS, 3 BLIMP TANKS, APPROXIMATELY 3,000 POL DRUMS AT DRUM FILLING AREA AND 3 POL TRUCKS. [REDACTED] 1 DESTROYED ABOVEGROUND TANK, NUMEROUS DESTROYED POL DRUMS, AND 3 PROBABLE POL TRUCKS BURNING.

ESTIMATED CAPACITY: PRE-STRIKE TANK 8,925 MT, POST-STRIKE TANK 7,950 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174-I, 3D ED, DEC 59 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:



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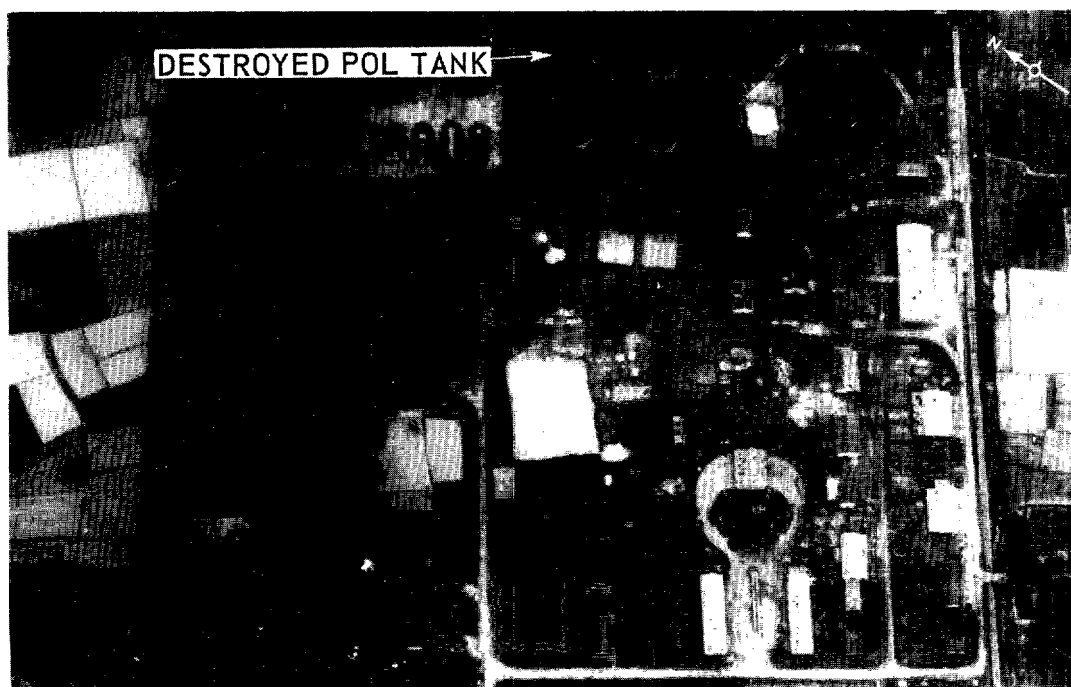
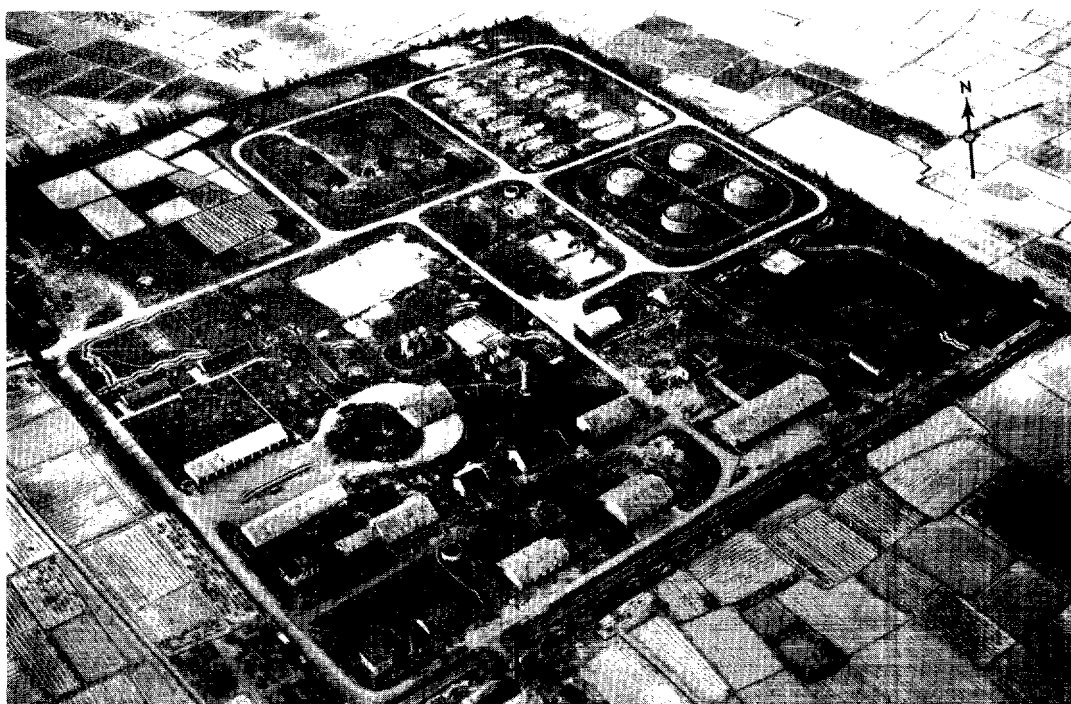
NGUYEN KHE PETROLEUM PRODUCTS STORAGE

WJ892408

2110N 10551E

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GEOGRAPHIC COORDINATES



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BE NUMBER	UTM COORDINATES	GEOGRAPHIC COORDINATES
	XJ243518	2116N 10611E

NAME: BAC GIANG PETROLEUM PRODUCTS STORAGE

LOCATION: SOUTH EDGE OF BAC GIANG ON NORTH BANK OF THE SONG THUONG (RIVER)

DESCRIPTION: [REDACTED] 1 LARGE AND 3 MEDIUM VERTICAL TANKS, 4 ELEVATED BLIMP TANKS, AND 2 **CYLINDRICAL** UNDERGROUND TANKS.

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[REDACTED] 1 POSSIBLY DAMAGED LARGE VERTICAL TANK, 2 DESTROYED AND 1 POSSIBLY DAMAGED MEDIUM TANK, AND 1 DESTROYED AND 3 DAMAGED BLIMP TANKS.

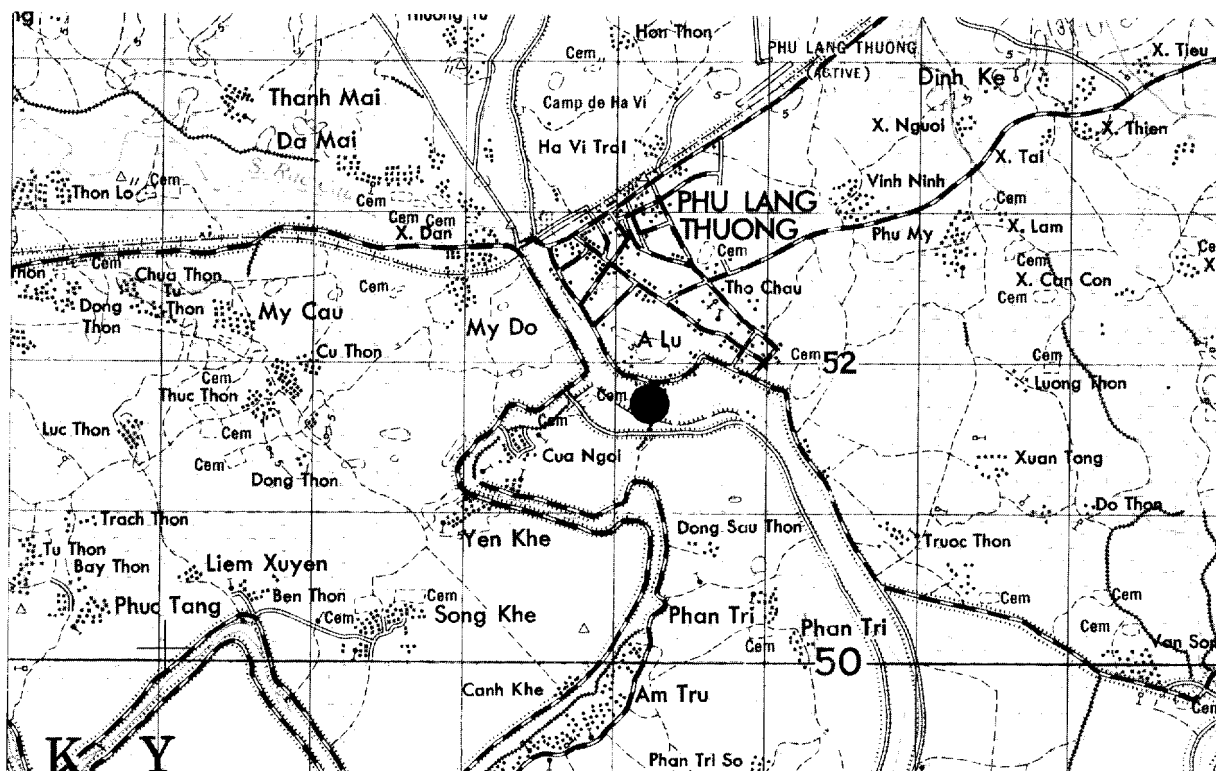
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ESTIMATED CAPACITY: PRE-STRIKE TANK 2,330 MT, EXCLUSIVE OF UNDERGROUND TANKS

MAP REFERENCES: AMS SERIES L701, SHEET 6274 IV, 3D ED, DEC 59 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE [REDACTED]

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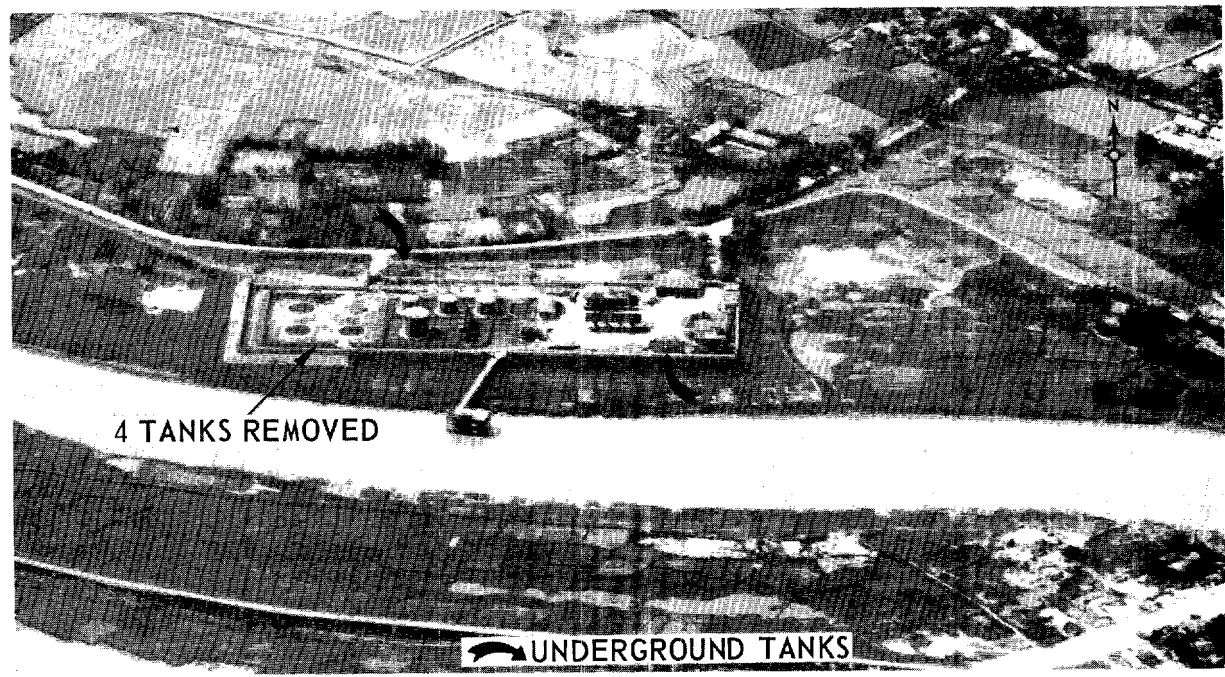
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BAC GIANG PETROLEUM PRODUCTS STORAGE

XJ243518
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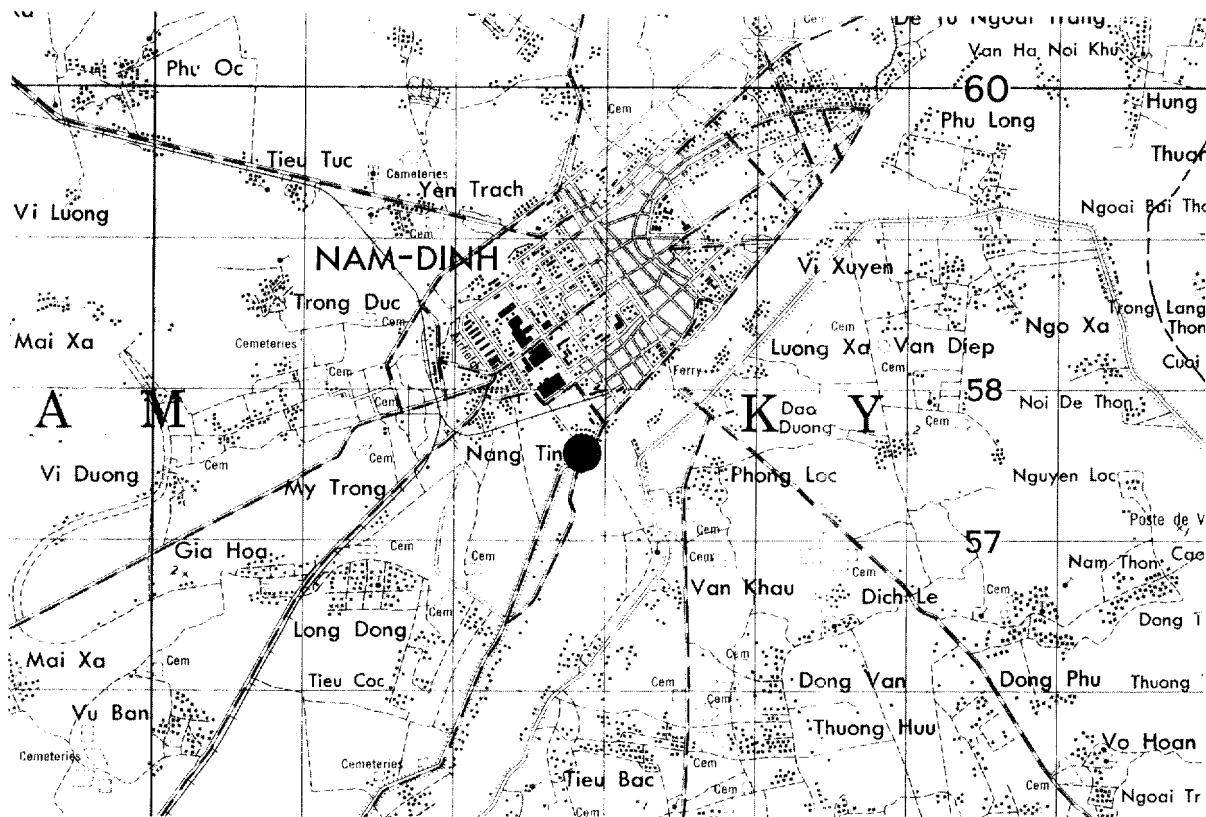
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XH228576
UTM COORDINATES2024N 10610E
GEOGRAPHIC COORDINATES**NAME:** NAM DINH PETROLEUM PRODUCTS STORAGE**LOCATION:** ON SOUTH EDGE OF NAM DINH ON WEST BANK OF THE NAM DINH GIANG (RIVER)**DESCRIPTION:** BASIC PETROLEUM PRODUCTS STORAGE FACILITY HAS BEEN DESTROYED. AREA OF FACILITY CONTAINS 800 FIFTY-FIVE-GAL-TYPE DRUMS AND AT LEAST 1,000 THIRTY-GAL-TYPE DRUMS STACKED IN SMALL GROUPS AND 4 SMALL POL TANKS.**ESTIMATED CAPACITY:** TANK 28 MT DRUM 360 MT**MAP REFERENCES:** AMS SERIES L701, SHEET 6272 III, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-15, 1ST ED, JUN 65 (U)**PHOTO REFERENCE:**

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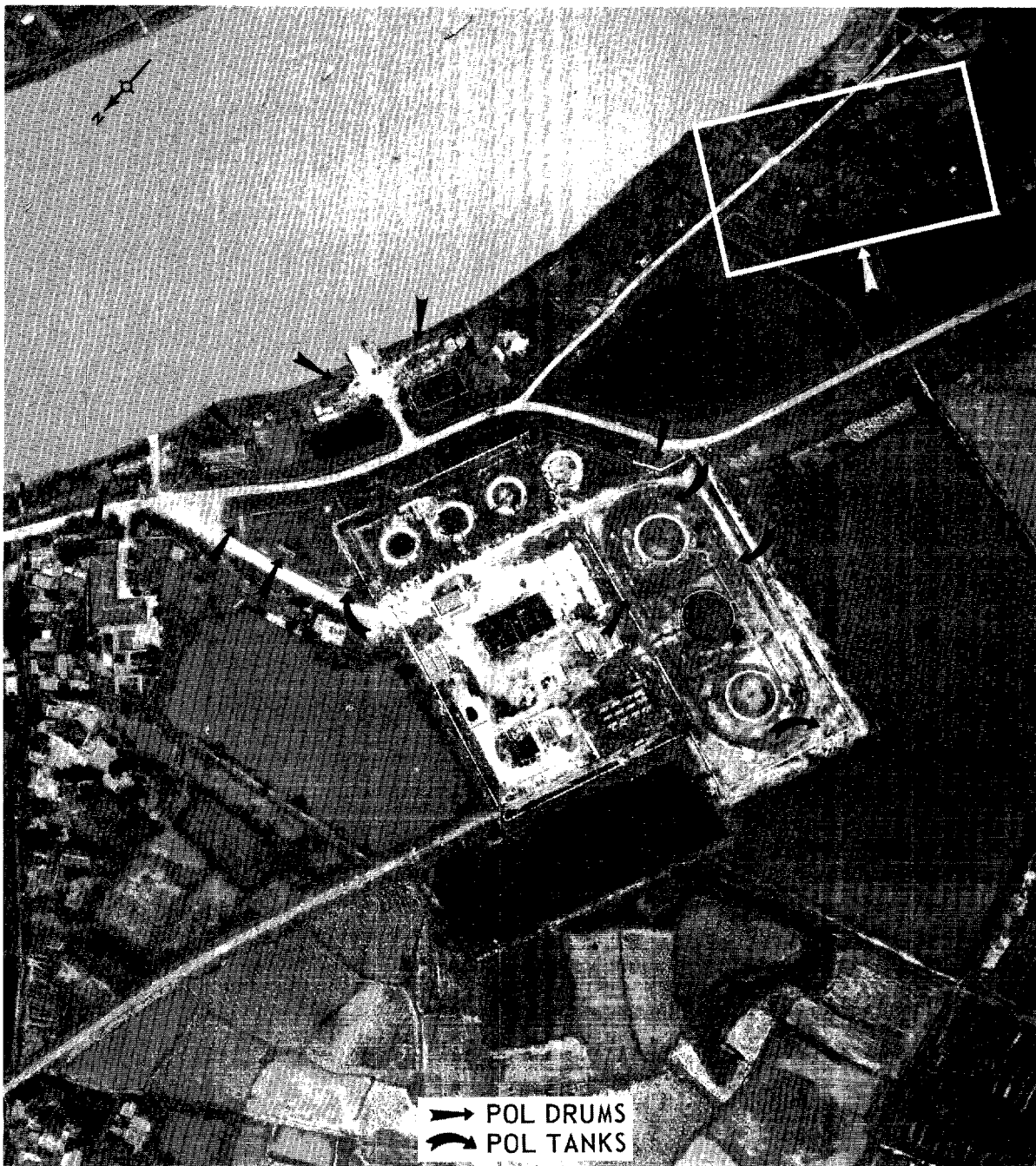
NAM DINH PETROLEUM PRODUCTS STORAGE

XH228576

2024N 10610E

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GEOGRAPHIC COORDINATES



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BE NUMBER	UTM COORDINATES	GEOGRAPHIC COORDINATES
	XJ730087	2052N 10639E

NAME: HAI PHONG PETROLEUM PRODUCTS STORAGE

LOCATION: 2 NM WNW OF HAI PHONG

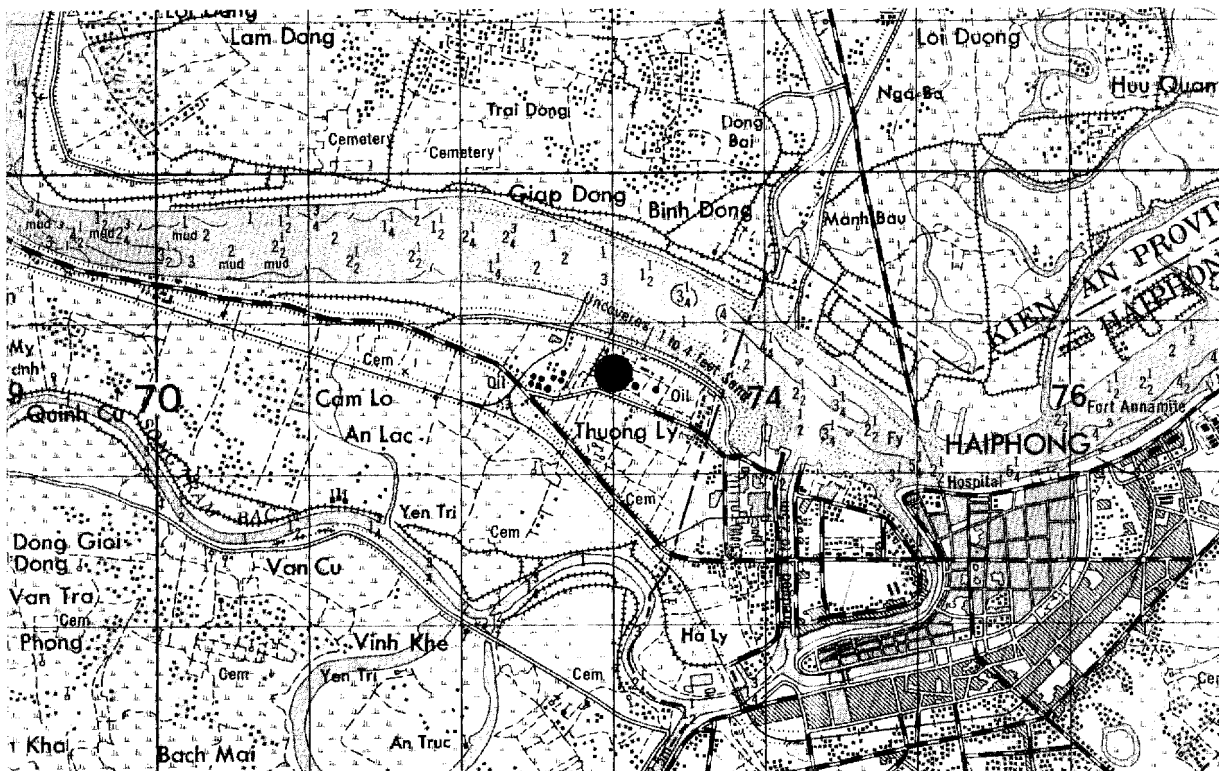
DESCRIPTION: PRIOR TO STRIKE OF 29 JUN 66, FACILITY CONSISTED OF 30 ABOVE-GROUND CYLINDRICAL STORAGE TANKS AND 5 HORIZONTAL TANKS. CUMULATIVE STRIKE DAMAGE TO THE FACILITY HAS BEEN 17 TANKS DESTROYED AND 15 TANKS DAMAGED.

ESTIMATED CAPACITY: PRE-STRIKE TANK 47,925 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6373-IV, 3D ED, JAN 61 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-16, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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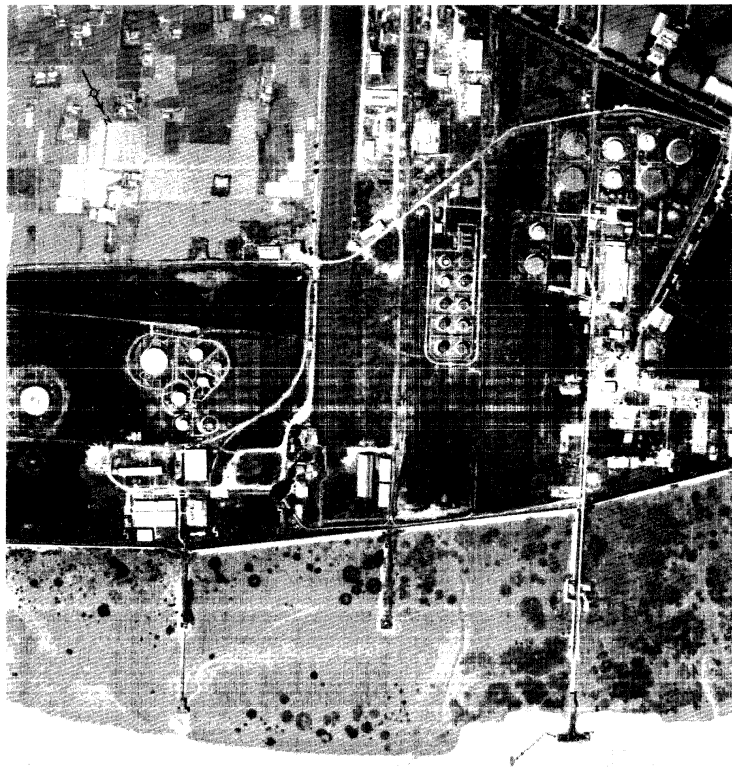
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XJ730087
UTM COORDINATES

HAI PHONG PETROLEUM PRODUCTS STORAGE

2052N 10639E
GEOGRAPHIC COORDINATES

PRE-STRIKE



POST-STRIKE



→ DESTROYED TANKS
→ DAMAGED TANKS

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25X1
P-219/66

25X1A

	XJ572260	2101N 10630E
BE NUMBER	UTM COORDINATES	GEOGRAPHIC COORDINATES

NAME: DUONG NHAM PETROLEUM PRODUCTS STORAGE UNDERGROUND

LOCATION: 0.4 NM NORTH OF DUONG NHAM AND 14.5 NM NW OF HAI PHONG

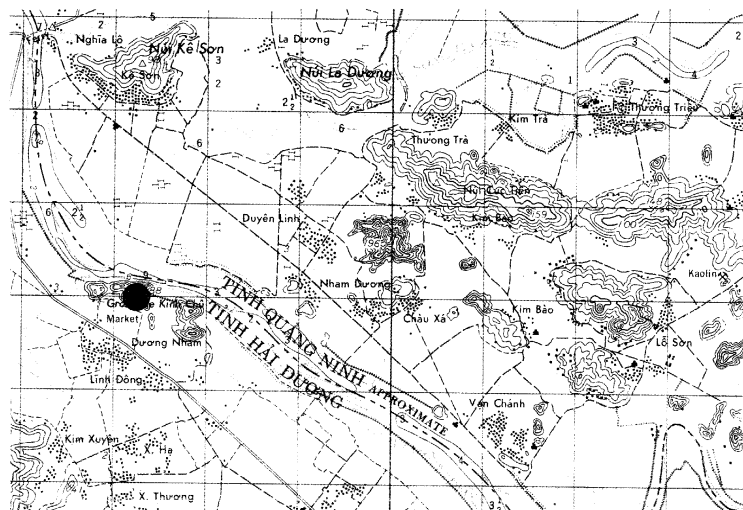
DESCRIPTION: AREA CONTAINS 4 VERTICAL ABOVEGROUND POL STORAGE TANKS, EACH WITH A U-SHAPED PROTECTION WALL AND LOCATED AT THE BASE OF A KARST HILL, AND 3 PROBABLE TANK BASES.

ESTIMATED CAPACITY: TANK 4,920 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6374-III, 1ST ED, APP 65 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-12, 3D ED, JUN 65 (U)

PHOTO REFERENCE:

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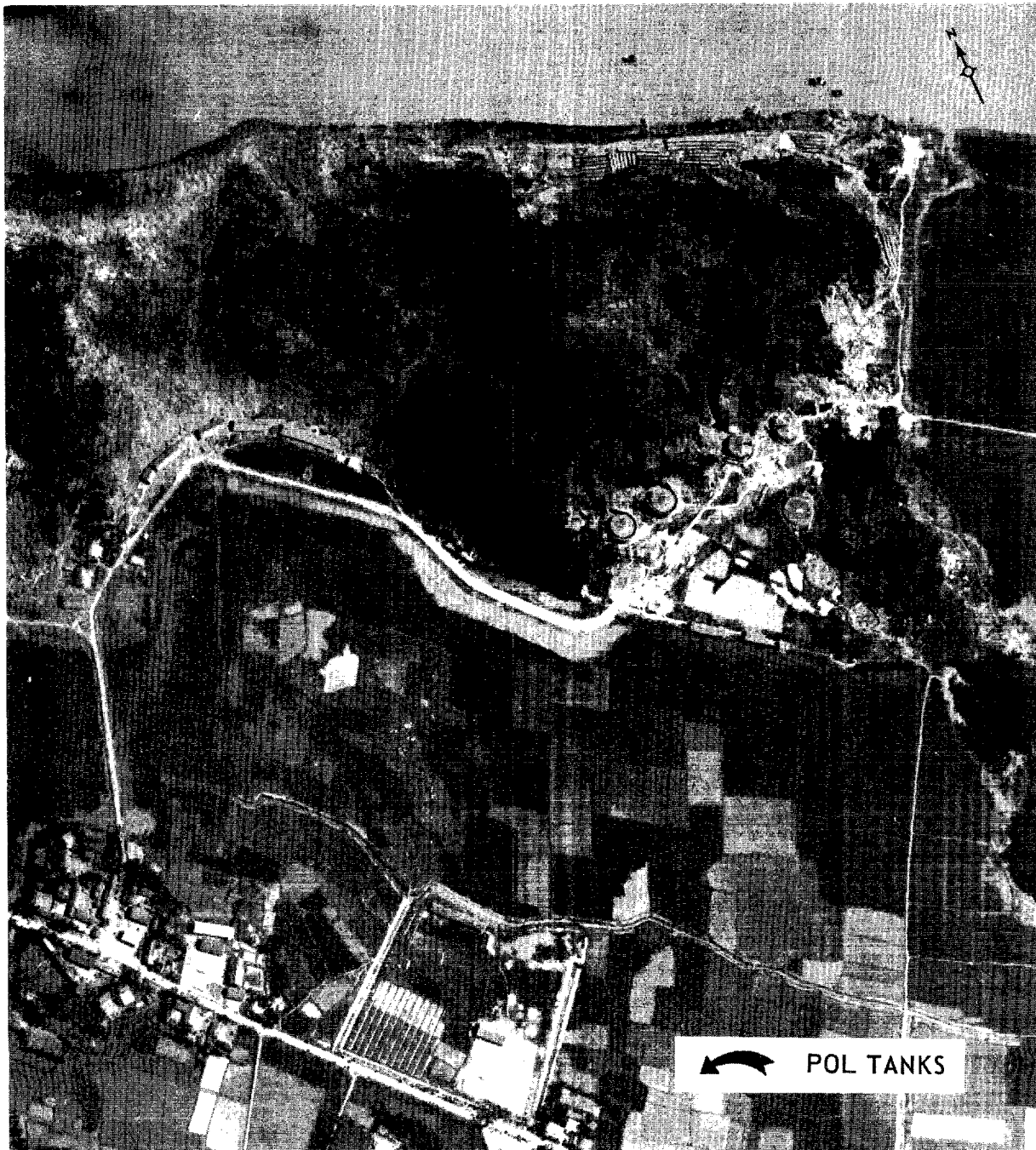
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R-218711

DUONG NHAM PETROLEUM PRODUCTS STORAGE UNDERGROUND

XJ572260
UTM COORDINATES

2101N 10630E
GEOGRAPHIC COORDINATES



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DE NUMBER

XH871905
UTM COORDINATES

2042N 10647E
GEOGRAPHIC COORDINATES

NAME: DO SON PETROLEUM STORAGE

LOCATION: ON DO SON PENINSULA, 0.5 NM SE OF DO SON, AND 10.8 NM SE OF HAI PHONG

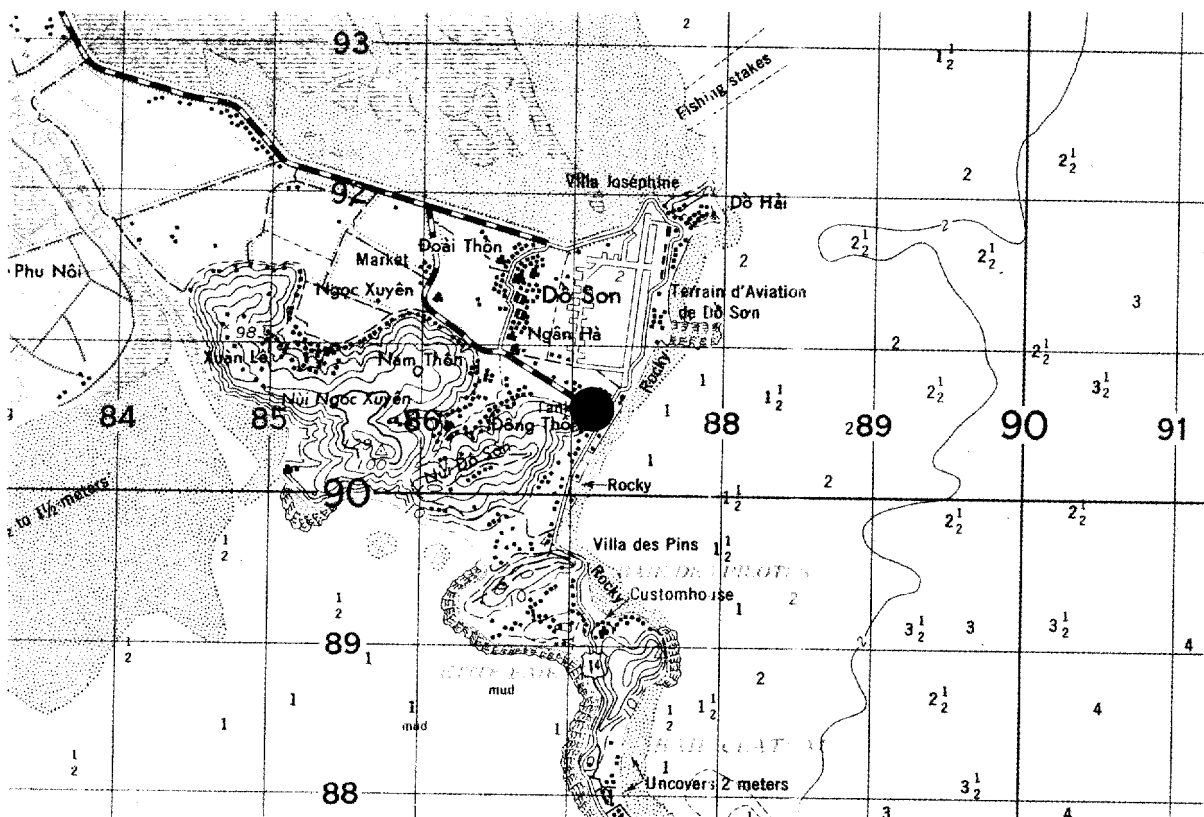
DESCRIPTION: STORAGE AREA CONSISTS OF 2 VERTICAL ABOVEGROUND TANKS, EACH WITH CIRCULAR BLAST WALLS, LOCATED AT BASE OF HILL.

ESTIMATED CAPACITY: TANK 3,400 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6373-II, 1ST ED, JUN 64 (U)
AMS SERIES JOG(G) 1501, SHEET 1 F 48-12, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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DO SON PETROLEUM STORAGE

XH871905

2042N 10647E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

WF344841
UTM COORDINATES

1851N 10519E
GEOGRAPHIC COORDINATES

NAME: PHU VAN POL STORAGE

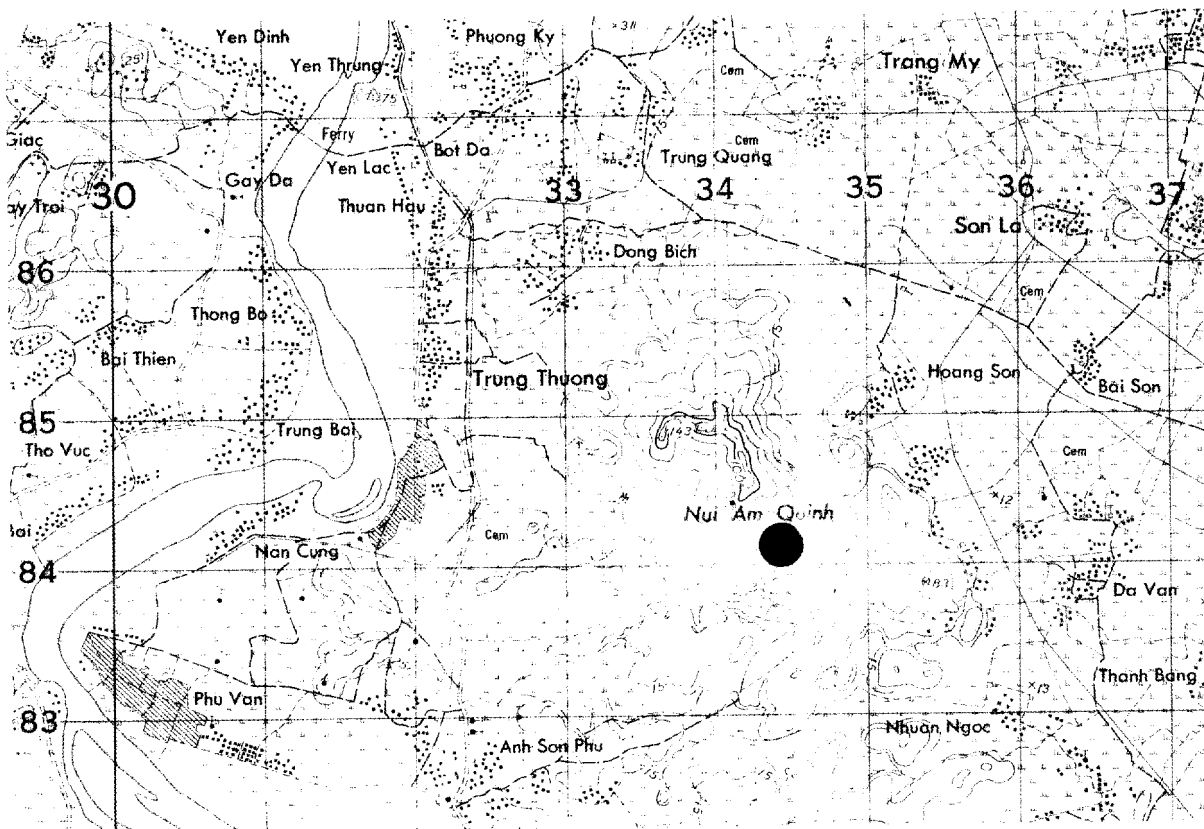
LOCATION: 2.3 NM ENE OF PHU VAN

DESCRIPTION: [REDACTED] 14 BUNKERS (EACH
CONTAINING 6 POL TANKS) AND 3 TANKS VISIBLE IN EXCAVATIONS. [REDACTED]
[REDACTED] THE FACILITY TO BE SEVERELY DAMAGED AND PROBABLY NOT
PRESENTLY BEING USED FOR POL STORAGE.

ESTIMATED CAPACITY: PRE-STRIKE TANK 1,000 MT, POST-STRIKE NONE

MAP REFERENCES: AMS SERIES L701, SHEET 6067-1, 1ST ED, JAN 61 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-7, 1ST ED, JUN 65 (U)

PHOTO REFERENCE: [REDACTED]



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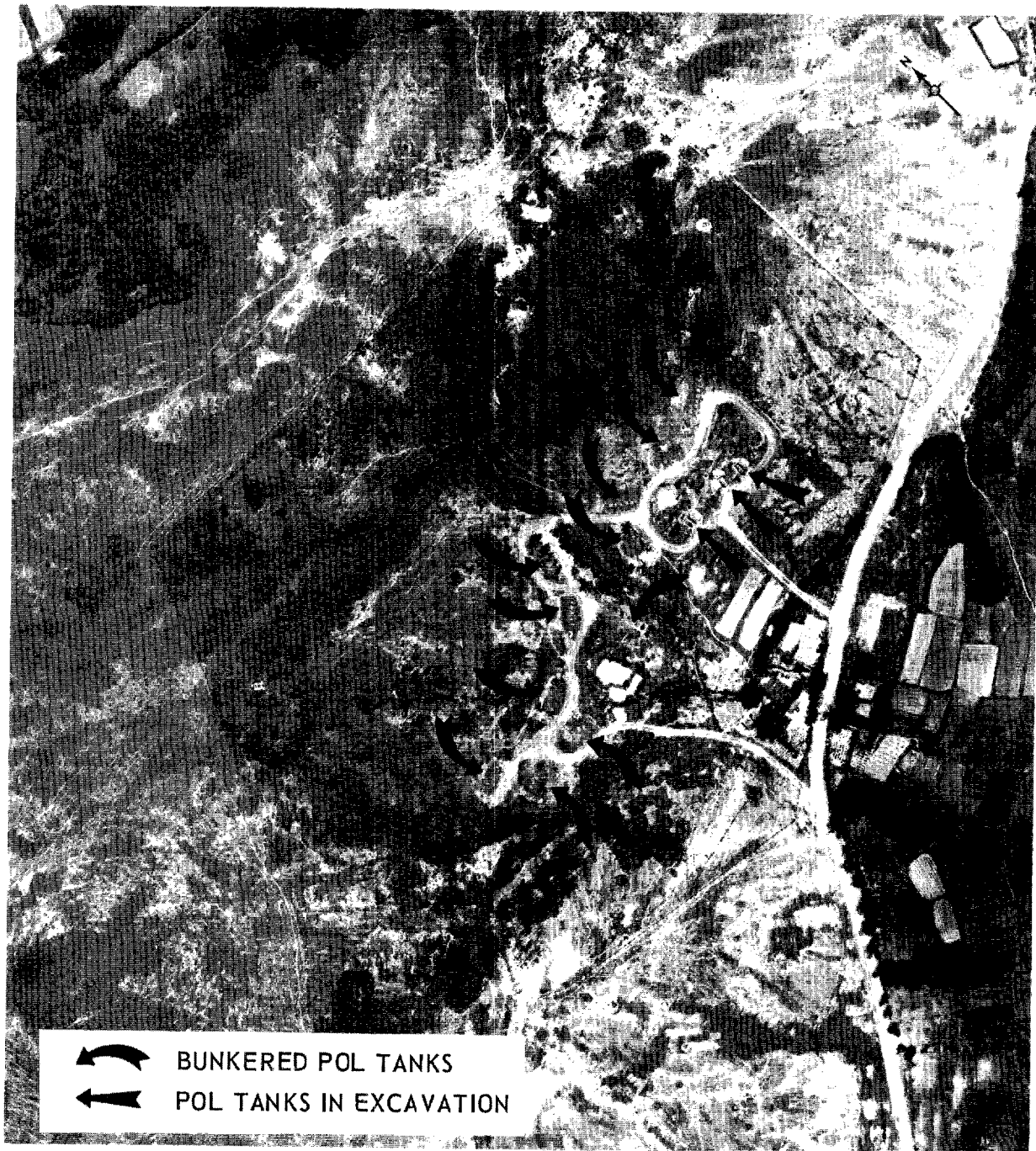
PHU VAN POL STORAGE

WF344841

1851N 10519E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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VINH PETROLEUM PRODUCTS STORAGE

WF762644
UTM COORDINATES

1840N 10543E
GEOGRAPHIC COORDINATES



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25X1A		WG372250	1913N 10521E
	BE NUMBER	UTM COORDINATES	GEOGRAPHIC COORDINATES

NAME: PHU QUI PETROLEUM PRODUCTS STORAGE

LOCATION: 0.7 NM SW OF PHU QUI AND 38 NM NW OF VINH

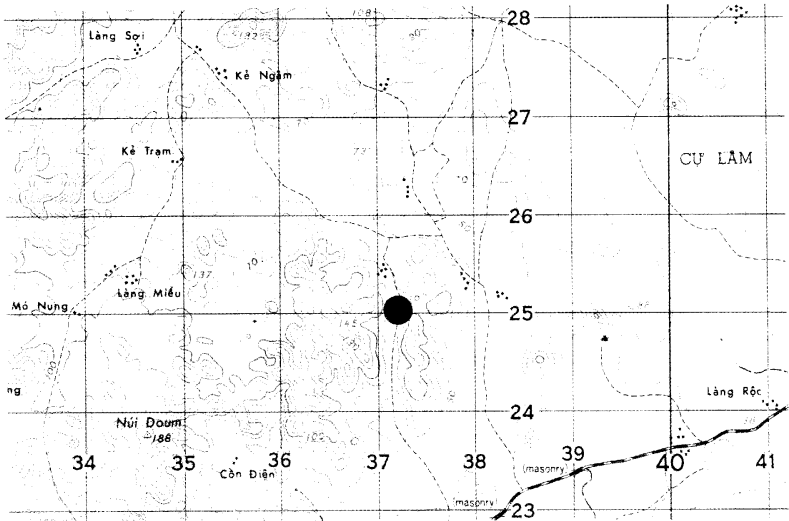
DESCRIPTION: PRE-STRIKE PHOTOGRAPHY REVEALS AREA IN LATE STAGE OF CONSTRUCTION WITH 9 VERTICAL TANKS CONSTRUCTED FROM PREFABRICATED SECTIONS, AND OPEN PIPELINE TRENCHES WITH PIPES BEING INSTALLED. ESTIMATED POTENTIAL CAPACITY WAS 9,000 MT. POST-STRIKE PHOTOGRAPHY REVEALS 2 DESTROYED, 6 DAMAGED, AND 1 POSSIBLY DAMAGED TANK. NO ACTIVITY IS OBSERVED, BUT SERVICE ROAD IS UNPAVED.

ESTIMATED CAPACITY: NONE

MAP REFERENCES: AMS SERIES L701, SHEET 6068-1, 1ST ED, JUN 64 (U)
AMS SERIES J06(G) 1501, SHEET NF 48-3, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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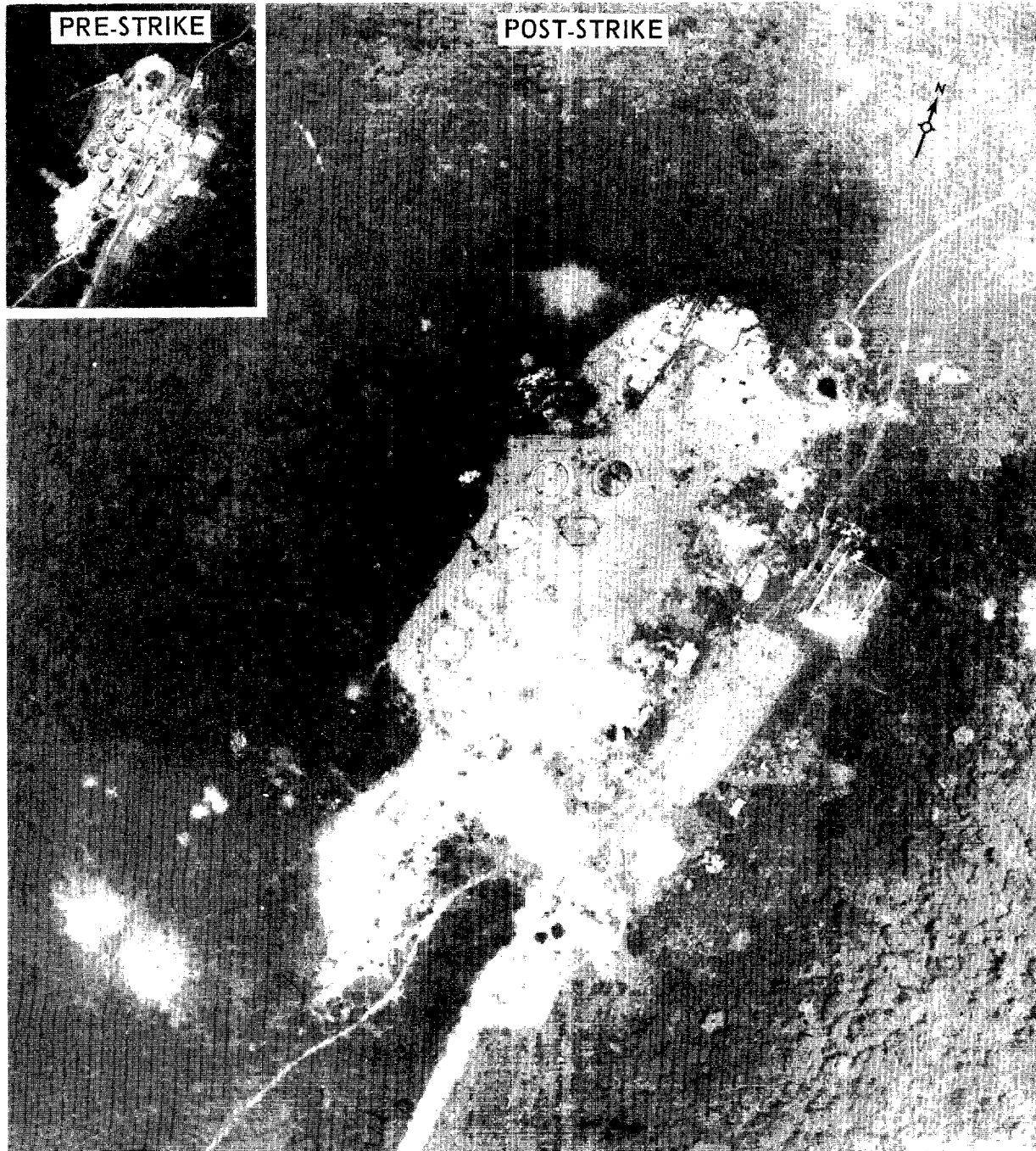
PHU QUI PETROLEUM PRODUCTS STORAGE

WG372250

1913N 10521E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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WJ921266
UTM COORDINATES

HANOI/GIA LAM AIRFIELD POL STORAGE
2102N 10553E
GEOGRAPHIC COORDINATES



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B

CATEGORY B.
DISPERSED STORAGE AREAS

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TABLE OF CONTENTS CATEGORY B

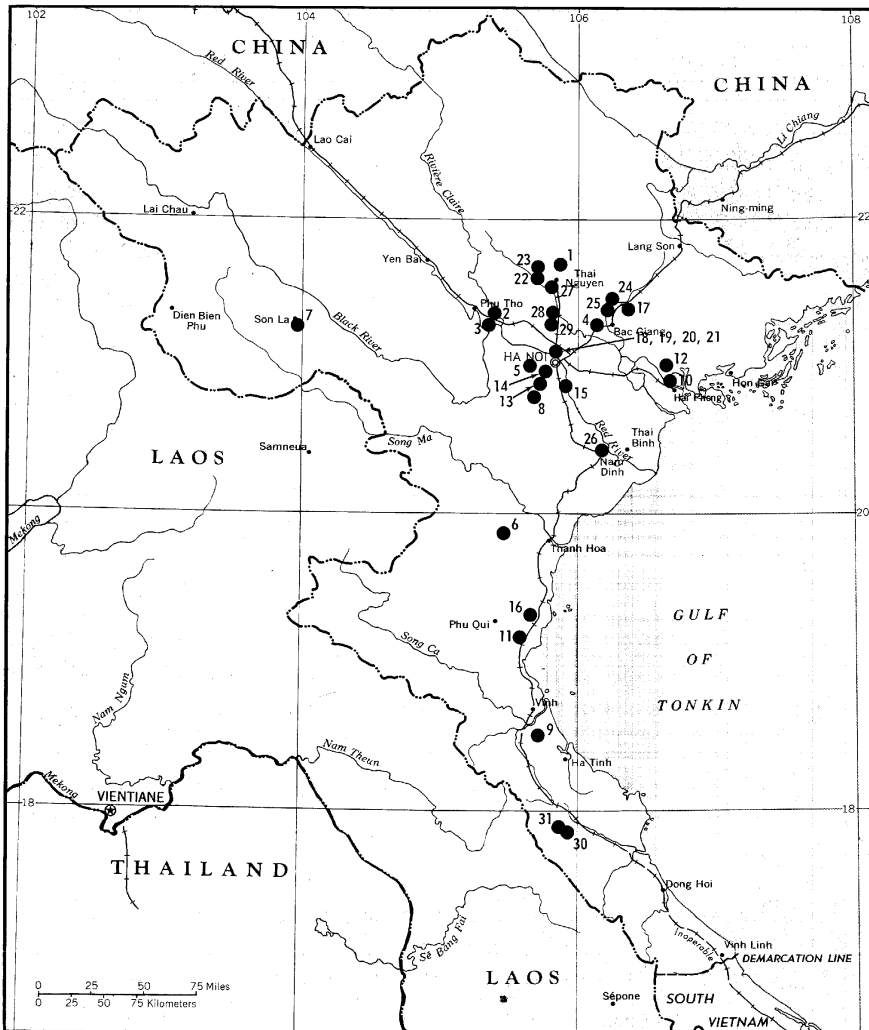
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	Van Lung Petroleum Products Storage UG	B3, B4
	Van Lung Petroleum Products Storage West UG	B5, B6
	Hoang Mai POL Storage Area	B7, B8
	Ha Noi Petroleum Products Thi Cam	B9, B10
	Bai Thuong Petroleum Products Storage UG Southeast	B11, B12
	Son La Petroleum Products Storage	B13, B14
	Thuong Thon Petroleum Products Storage UG	B15, B16
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	Thai Lai Petroleum Products Storage	B19, B20
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	Xom Duong Quan Petroleum Products Storage UG	B61, B62

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**KEY TO CATEGORY B
DISPERSED STORAGE AREAS**

1. Thai Nguyen Petroleum Products PUG South
2. Van Lung Petroleum Products Storage UG
3. Van Lung Petroleum Products Storage West UG
4. Hoang Mai POL Storage Area
5. Ha Noi Petroleum Products Thi Cam
6. Bai Thuong Petroleum Products Storage UG Southeast
7. Son La Petroleum Products Storage
8. Thuong Thon Petroleum Products Storage UG
9. Ngoc Son Petroleum Products Storage UG
10. Thai Lai Petroleum Products Storage
11. Yen Hau Petroleum Products Storage PUG
12. Thanh Lang Petroleum Products Storage PUG
13. Ha Noi Petroleum Products Storage UG Thanh Liet (Area 1)
14. Ha Noi Petroleum Products Storage UG Thanh Liet (Area 2)
15. Bang So Petroleum Products Storage PUG
16. Son Chau Petroleum Products Storage PUG
17. Kep Petroleum Products Storage
18. Ha Noi Petroleum Products Storage Duc Noi (Area 1)
19. Ha Noi Petroleum Products Storage Duc Noi (Area 2)
20. Ha Noi Petroleum Products Storage Duc Noi (Area 3)
21. Ha Noi Petroleum Products Storage Duc Noi (Area 4)
22. Cu Van Petroleum Products Storage
23. Cu Van Petroleum Products Storage East UG
24. Dao Quan Petroleum Products Storage East
25. Dao Quan Petroleum Products Storage West
26. Nam Dinh Petroleum Products Storage PUG
27. Tung Tu Petroleum Products Storage UG
28. Phuc Yen Airfield POL Storage Area 1
29. Phuc Yen Airfield POL Storage Area 2
30. Xom Duong Quan Petroleum Products Storage UG East
31. Xom Duong Quan Petroleum Products Storage UG

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REFERENCES

2139N 10550E
GEOGRAPHIC COORDINATES

LOCATION: 4.1 NM NORTH OF THAI NGUYEN AND 0.8 NM EAST OF VAN HAO

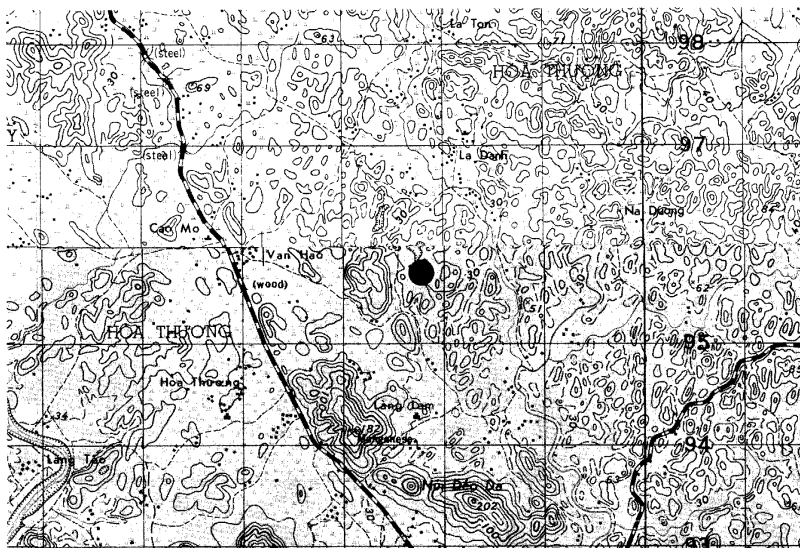
DESCRIPTION: AREA CONSISTS OF 2 SITES. ONE CONTAINS 80 BUNKERED TANKS, 14 OPEN EXCAVATIONS, AND OVER 4,000 DRUMS. IN OTHER SITE, SMOKE COVERED, ONLY 12 OPEN EXCAVATIONS ARE DISCERNIBLE.

ESTIMATED CAPACITY: TANK 960 MT DRUM 800 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6175-I, 1ST ED, 1963 (U)
AMS SERIES JOG(C) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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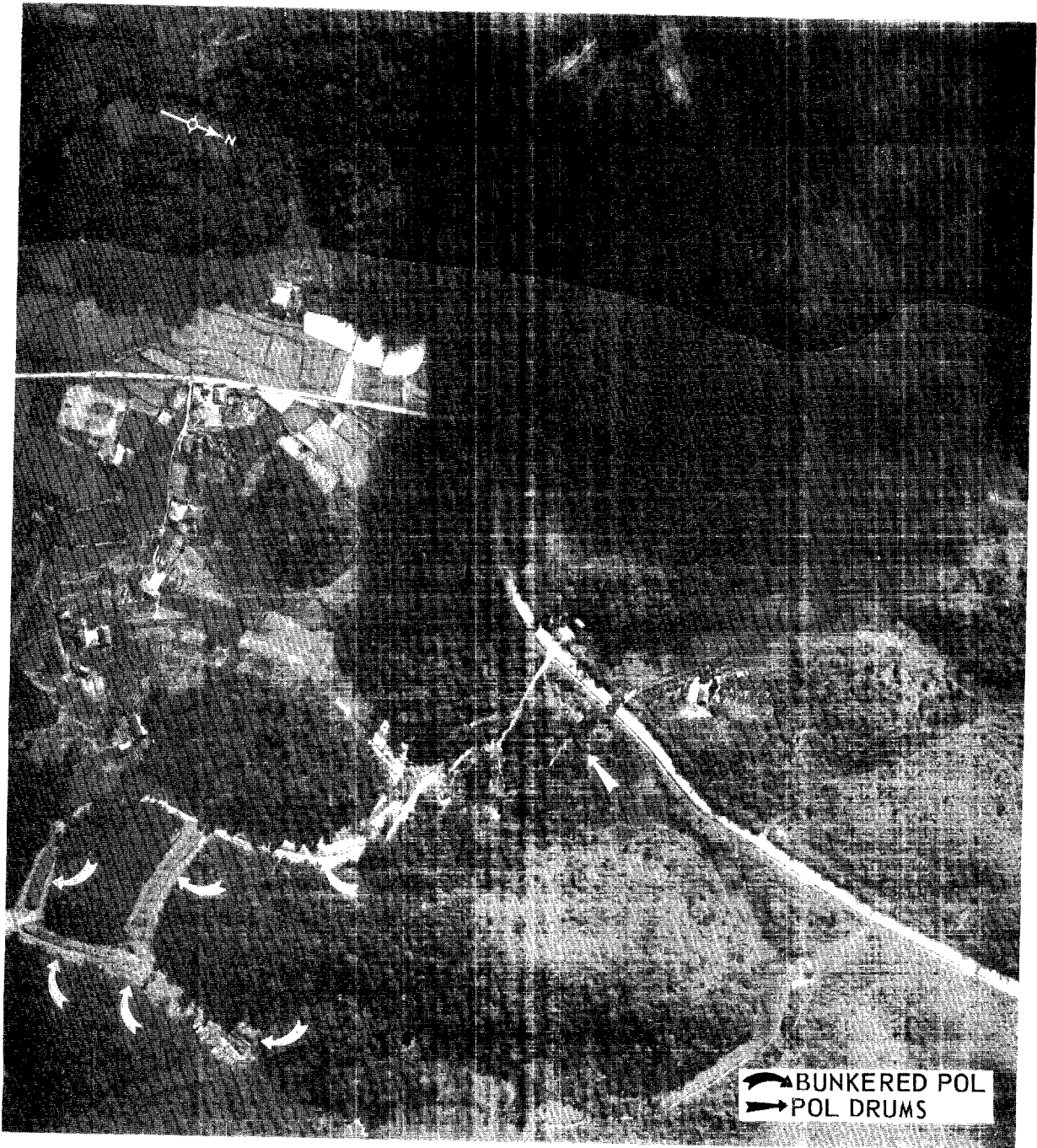
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THAI NGUYEN PETROLEUM PRODUCTS PUG SOUTH

R-218/66

WJ877956
UTM COORDINATES

2139N 10550E
GEOGRAPHIC COORDINATES



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WJ388594
UTM COORDINATES

2120N 10522E
GEOGRAPHIC COORDINATES

NAME: VAN LUNG PETROLEUM PRODUCTS STORAGE UG

LOCATION: 0.5 NM SSW OF VAN LUNG AND 0.1 NM NORTH OF ROUTE 2 AND THE
HA NOI/LAO CAI RAIL LINE

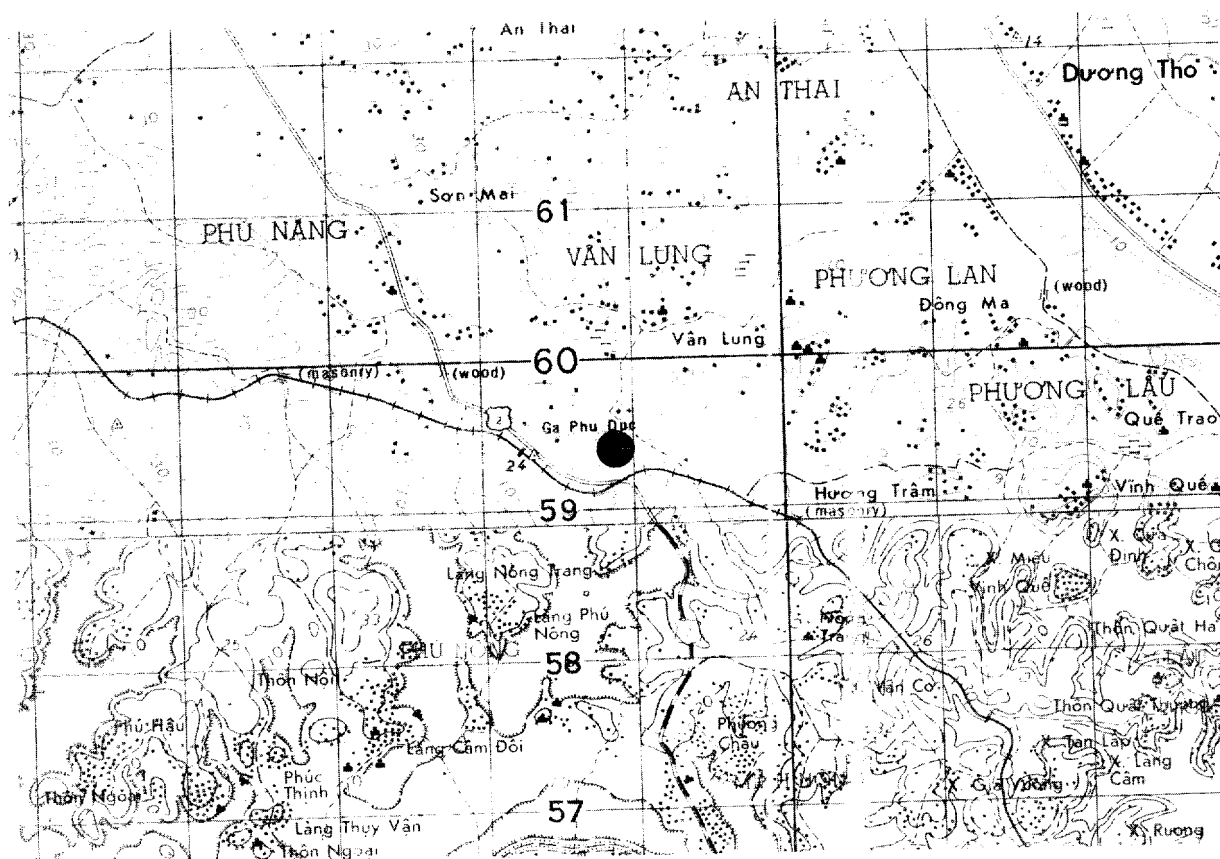
DESCRIPTION: STORAGE SITE CONSISTS OF AT LEAST 28 BURIED POL TANKS AND
APPROXIMATELY 80 POL DRUMS IN OPEN STORAGE WITHIN A LOOP ROAD. SITE IS
CONNECTED TO ROUTE 2 BY A SECONDARY ROAD.

ESTIMATED CAPACITY: TANK 336 MT DRUM 16 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6075-II, 1ST ED, JAN 64 (U)
AMS SERIES JOG(G) 1501, SHEET NF 4-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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VAN LUNG PETROLEUM PRODUCTS STORAGE UG

WJ388594

2120N 10522E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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SE NUMBER

WJ379593
UTM COORDINATES

2120N 10521E
GEOGRAPHIC COORDINATES

NAME: VAN LUNG PETROLEUM PRODUCTS STORAGE WEST UG

LOCATION: 0.9 NM SSW OF VAN LUNG AND 0.2 NM SOUTH OF ROUTE 2 AND THE HA NOI/LAO CAI RAIL LINE

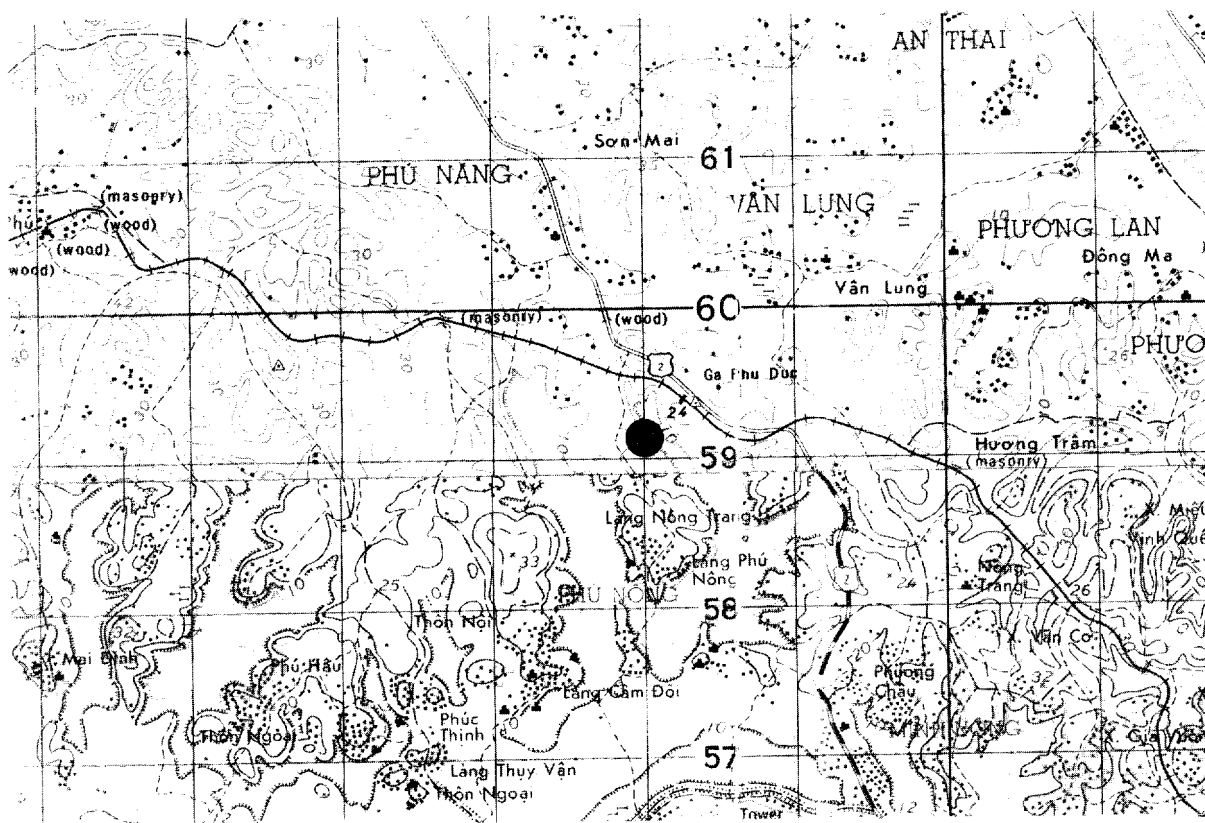
DESCRIPTION: STORAGE SITE CONSISTS OF 7 BUNKERED PUL TANKS AND 1 EMPTY EXCAVATION IN AN OPEN FIELD. SITE IS CONNECTED TO ROUTE 2 BY A SECONDARY ROAD.

ESTIMATED CAPACITY: TANK 84 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6075-II, 1ST ED, JAN 64 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-II, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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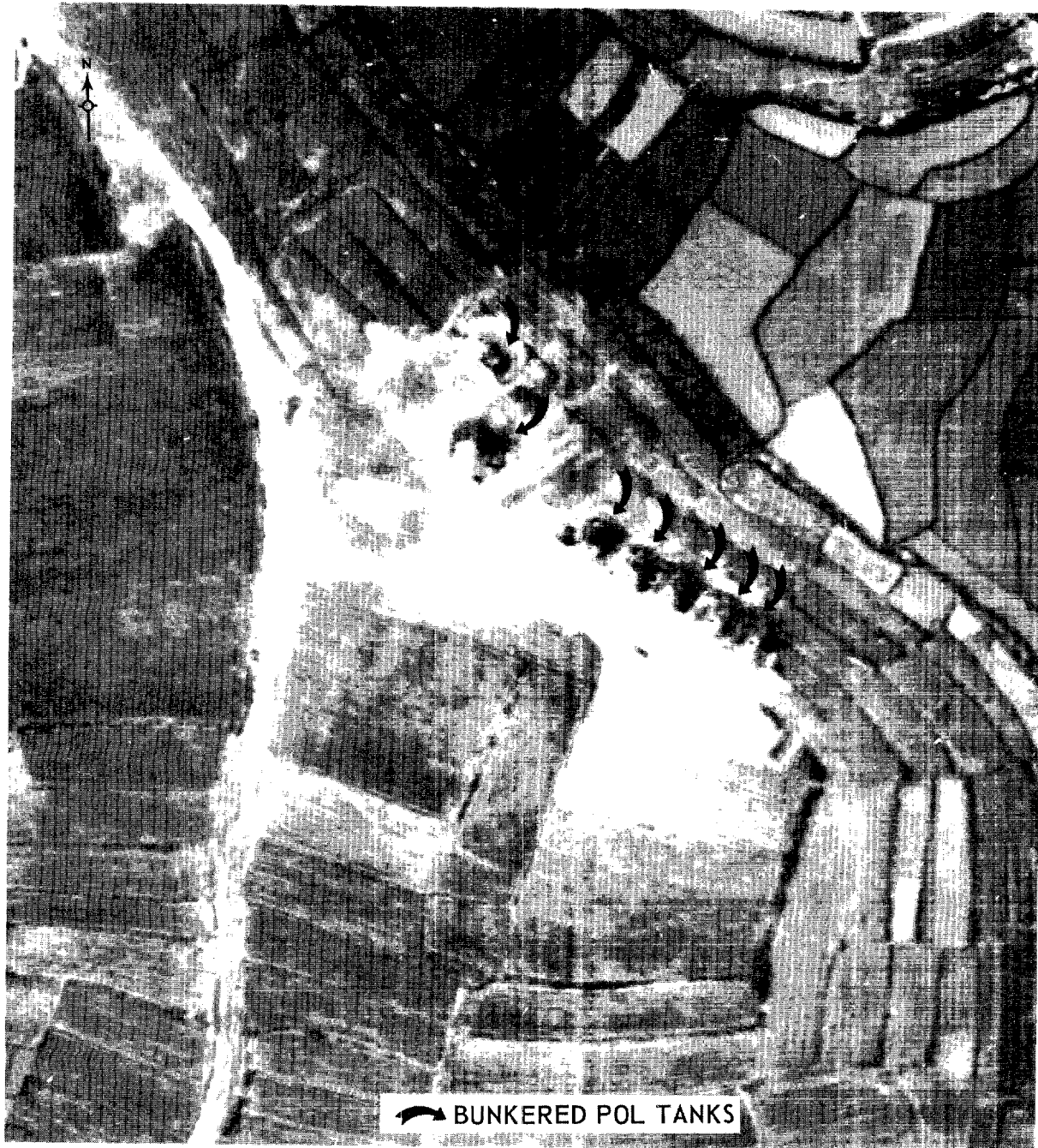
25X1 25X1C

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VAN LUNG PETROLEUM PRODUCTS STORAGE WEST UG

WJ379593
UTM COORDINATES

2120N 10521E
GEOGRAPHIC COORDINATES



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HOANG MAI POL STORAGE AREA

XJ148499

2114N 10606E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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1. 23/11/20

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REF NUMBER

WJ791254
UTM COORDINATES

2101N 10545E
GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS THI CAM

LOCATION: 4.5 NM WEST OF HA NOI AND 0.5 NM SE OF THI CAM

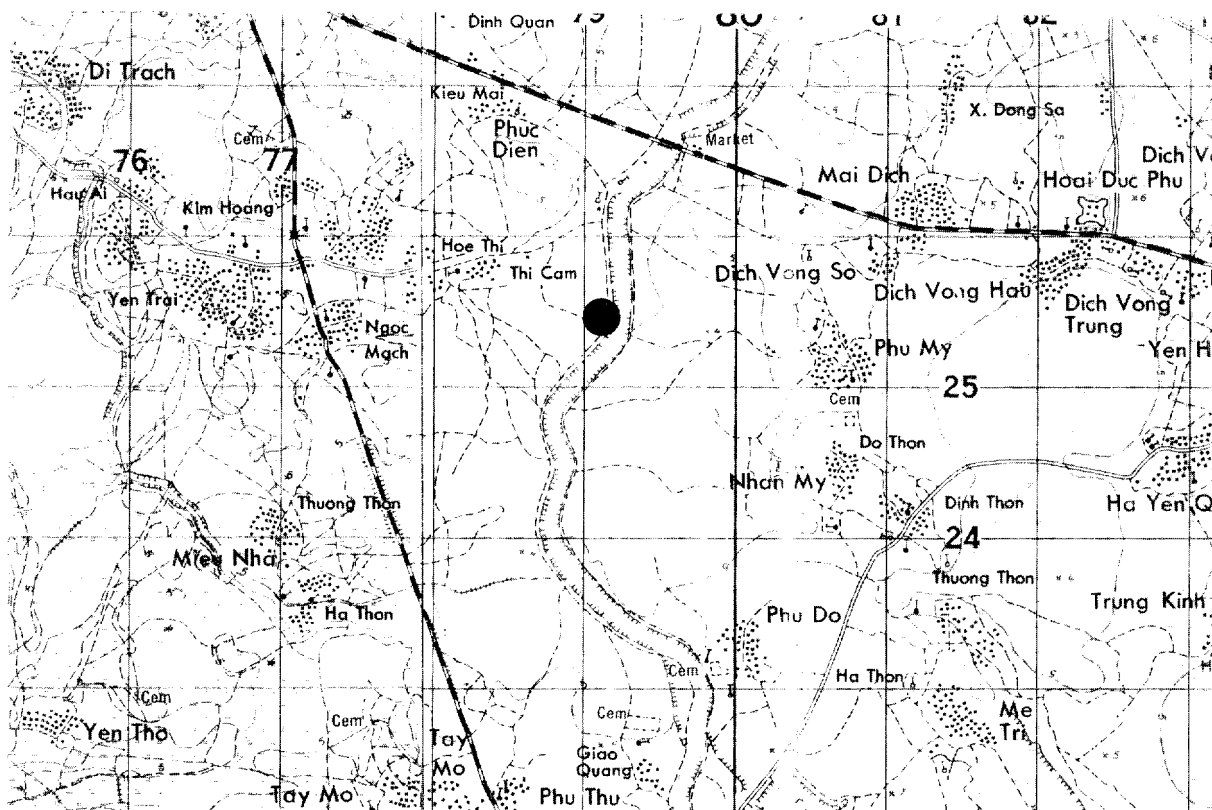
DESCRIPTION: STORAGE AREA CONTAINS AT LEAST 1,500 POL DRUMS DISPERSED IN A WOODED AREA ALONG A SECONDARY ROAD AND 14 PROBABLY BUNKERED POL TANKS ALONG 2 LOOP ROADS IMMEDIATELY WEST OF THE DRUM STORAGE.

ESTIMATED CAPACITY: TANK 168 MT DRUM 300 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174 11, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET 4F 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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HA NOI PETROLEUM PRODUCTS THI CAM

WJ791254

UTM COORDINATES

2101N 10545E

GEOGRAPHIC COORDINATES



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BE NUMBER

WG436952
UTM COORDINATES

1951N 10525E
GEOGRAPHIC COORDINATES

NAME: BAI THUONG PETROLEUM PRODUCTS STORAGE UG SOUTHEAST

LOCATION: 4.2 NM SW OF BAI THUONG AIRFIELD AND 3.2 NM SE OF BAI THUONG

DESCRIPTION: FACILITY IN WOODED AREA CONSISTS OF APPROXIMATELY 110 POL TANKS BURIED NEXT TO 3 LOOP ROADS, 60 UNBURIED TANKS, AND 7 OPEN EXCAVATIONS.

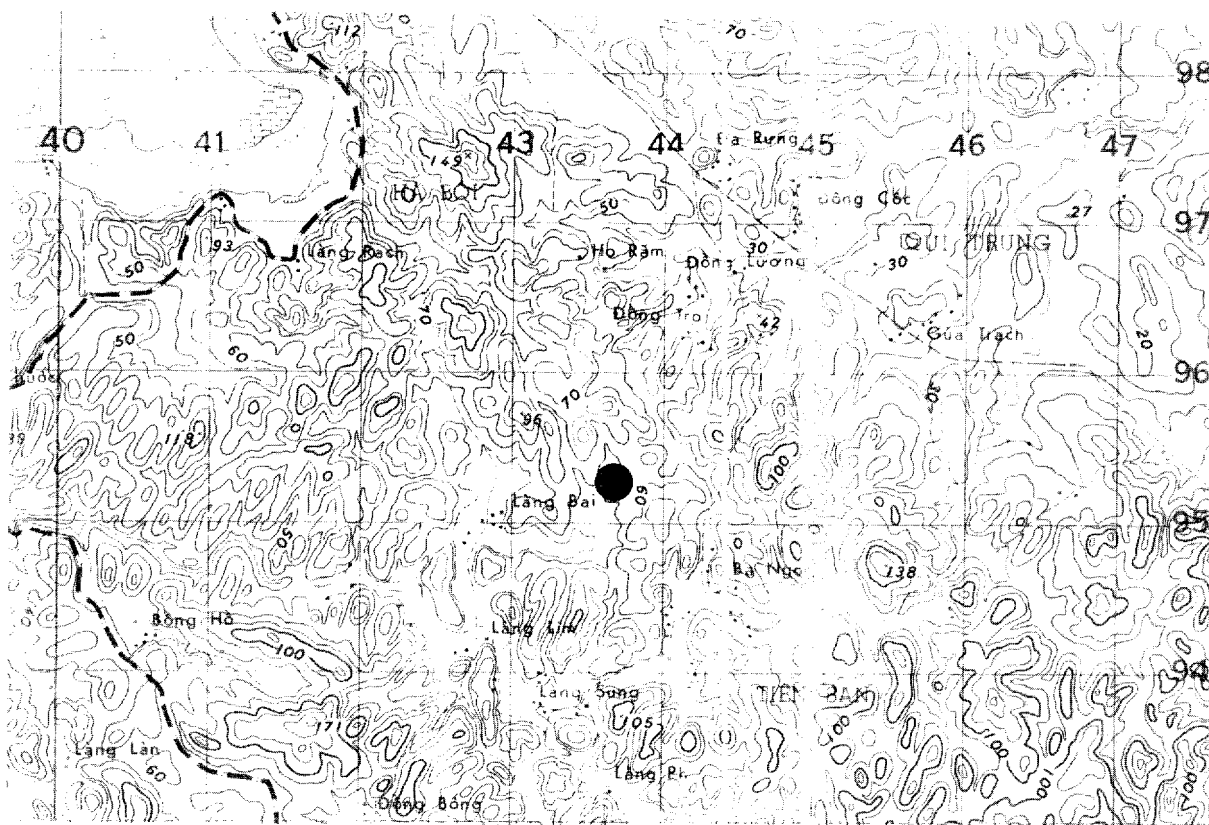
WHEN 40 BURIED TANKS, 18 OPEN EXCAVATIONS, AND AT LEAST 20 UNBURIED TANKS WERE OBSERVED.

ESTIMATED CAPACITY: TANK 2,040 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6070-I, 1ST ED, JAN 65 (U)
AMS SERIES JOG(G) 1501, SHEET 10 48-3, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

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BAI THUONG PETROLEUM PRODUCTS STORAGE UG SOUTHEAST

WG436952
UTM COORDINATES

1951N 10525E
GEOGRAPHIC COORDINATES



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00910549

2117N 10356E

BE NUMBER

UTM COORDINATES

GEOGRAPHIC COORDINATES

NAME: SON LA PETROLEUM PRODUCTS STORAGE

LOCATION: 2.8 NM SE OF SON LA AND IMMEDIATELY SOUTH OF ROUTE 6

DESCRIPTION: STORAGE SITE CONTAINS 32 BUNKERED FOL TANKS. SITE IS FENCE SECURED AND ATTEMPTS HAVE BEEN MADE TO CAMOUFLAGE BUNKERS AND ACCESS ROADS.

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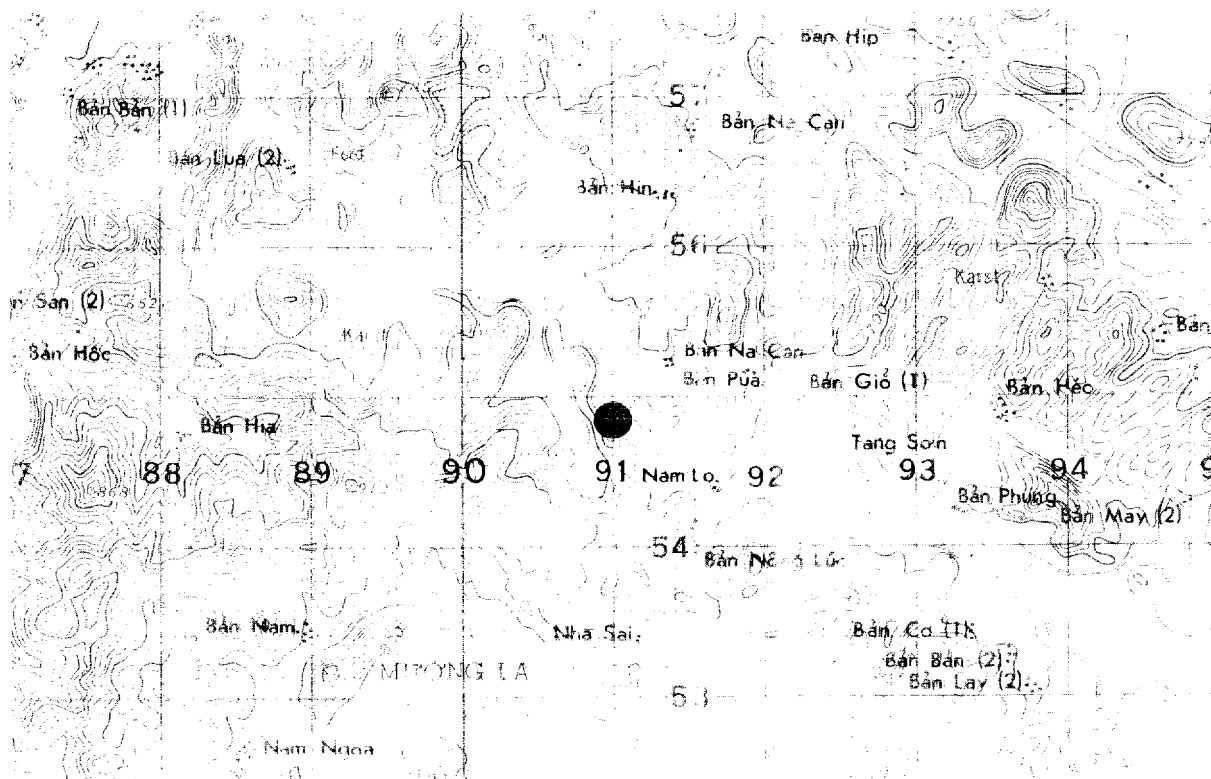
ESTIMATED CAPACITY: TANK 384 MT

MAP REFERENCES: AMS SERIES L701, SHEET 5774-I, 1ST ED, MAR 63 (U)
AMS SERIES JOGOG 1501, SHEET 48-10, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

[REDACTED]

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SON LA PETROLEUM PRODUCTS STORAGE

UJ910549

2117N 10356E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

44704984
UTM COORDINATES

2047N 10540E
GEOGRAPHIC COORDINATES

NAME: THUONG THON PETROLEUM PRODUCTS STORAGE UC

LOCATION: 0.2 NM SW OF THUONG THON AND 23 NM SSE OF HA NOI

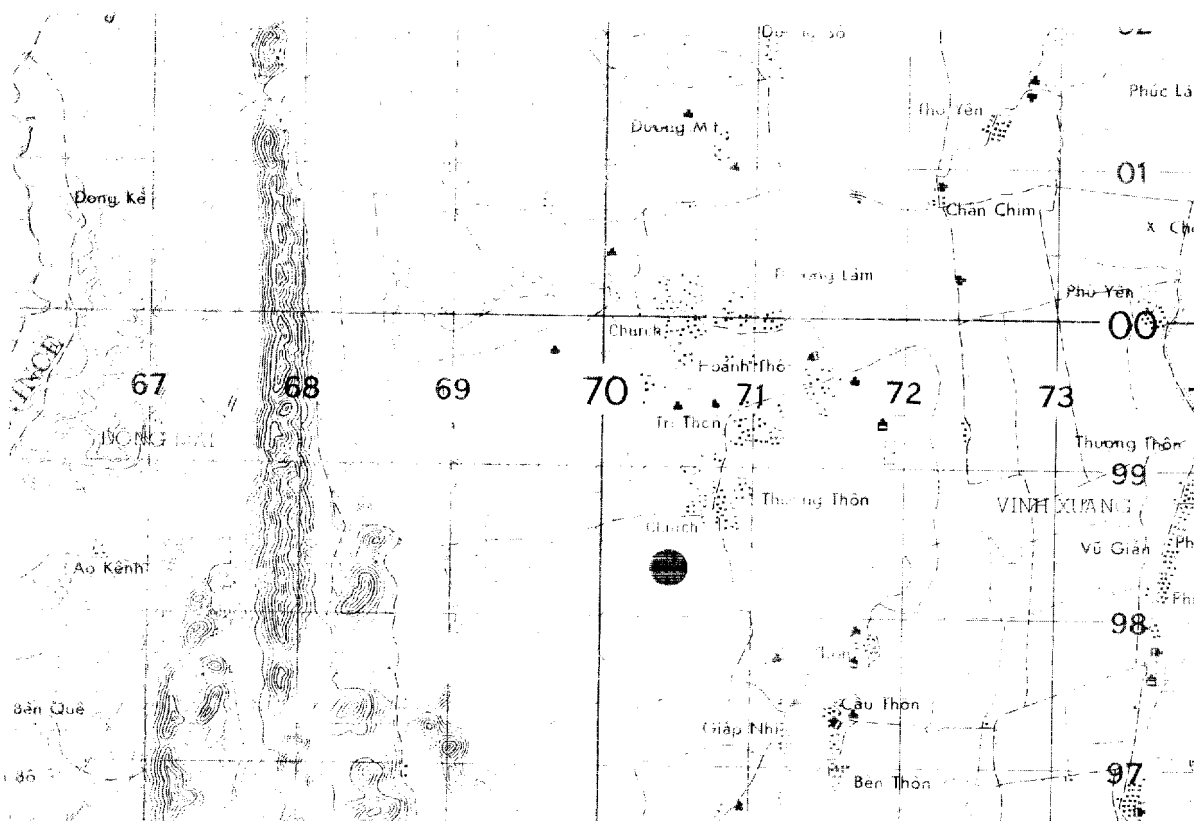
DESCRIPTION: FACILITY CONSISTS OF 38 BURIED POL TANKS, 24 EXCAVATIONS, AND 11 POL DRUMS.

ESTIMATED CAPACITY: TANK 456 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6173 II, 1ST ED, NOV 63 (U)
AMS SERIES JOGCA 1501, SHEET AF 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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R-218/66

THUONG THON PETROLEUM PRODUCTS STORAGE UG

WH704984

2047N 10540E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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BE NUMBER

WE746497
UTM COORDINATES

1832N 10542E
GEOGRAPHIC COORDINATES

NAME: NGOC SON PETROLEUM PRODUCTS STORAGE PUG

LOCATION: 8 NM SSE OF VINH AND 1 NM ESE OF NGOC SON

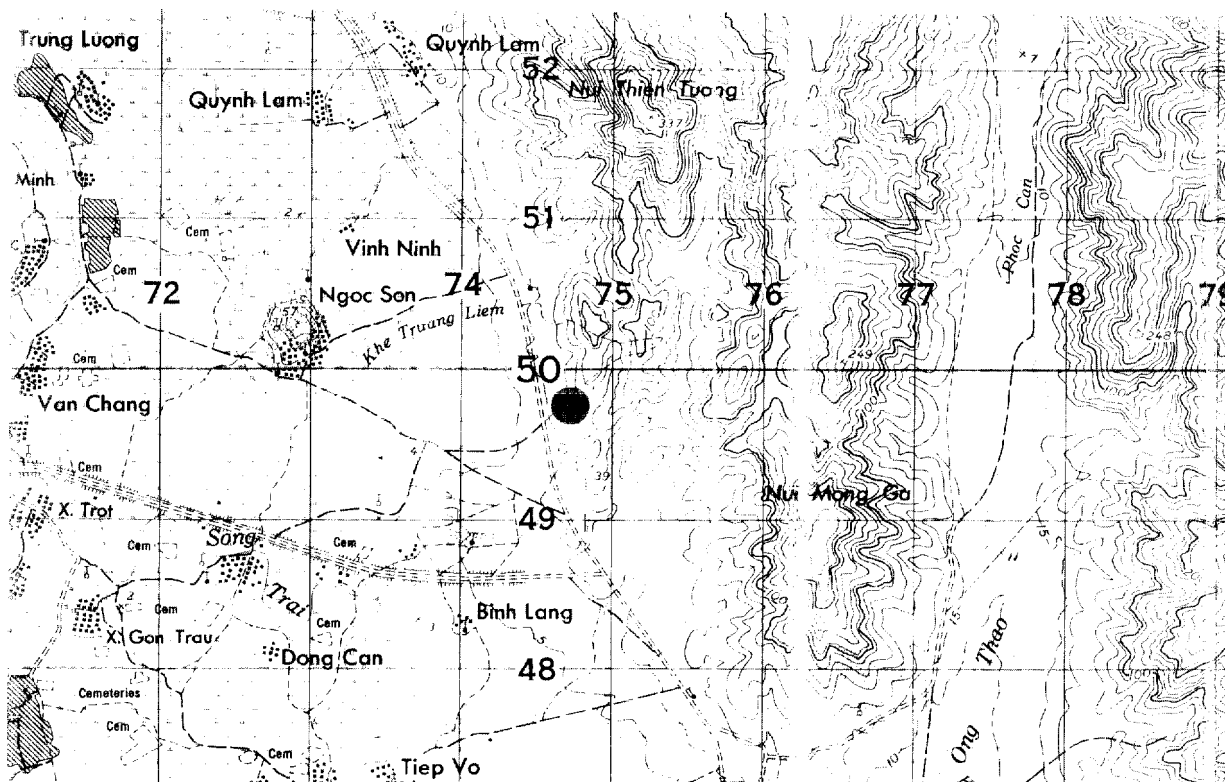
DESCRIPTION: STORAGE SITE CONTAINS 25 BURIED TANKS, 2 TANKS IN OPEN EXCAVATIONS, 2 UNBURIED TANKS, 13 OPEN EXCAVATIONS, AND 24 POL DRUMS ALONG A 1 KM SECTION OF ROUTE 1A. THE ENTIRE SITE IS NOT SHOWN ON THE PHOTO.

ESTIMATED CAPACITY: TANK 348 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6166 IV, 1ST ED, JAN 61 (U)
AMS SERIES L509, SHEET NE 48-2, 2DED, DEC 65 (U)

PHOTO REFERENCE:

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25X1 25X1C

NGOC SON PETROLEUM PRODUCTS STORAGE PUG

R-218/66

WE746497
UTM COORDINATES

1832N 10542E
GEOGRAPHIC COORDINATES



B18

25X1C Approved For Release 2003/06/04 : CIA-RDP78B04560A005500010027-9

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25X1

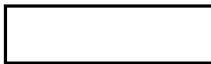
25X1C

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25X1

R-218/65

25X1A



XJ684145
UTM COORDINATES

2055N 10637E
GEOGRAPHIC COORDINATES

NAME: THAI LAI PETROLEUM PRODUCTS STORAGE

LOCATION: 0.3 NM SE OF THAI LAI AND 5.4 NM NW OF HAI PHONG ON NORTH BANK OF THE CUA CAM (RIVER)

DESCRIPTION: SITE CONTAINS 10 POL TANKS AND 10 EXCAVATIONS PARALLEL TO THE NORTH BANK OF THE CUA CAM (RIVER).

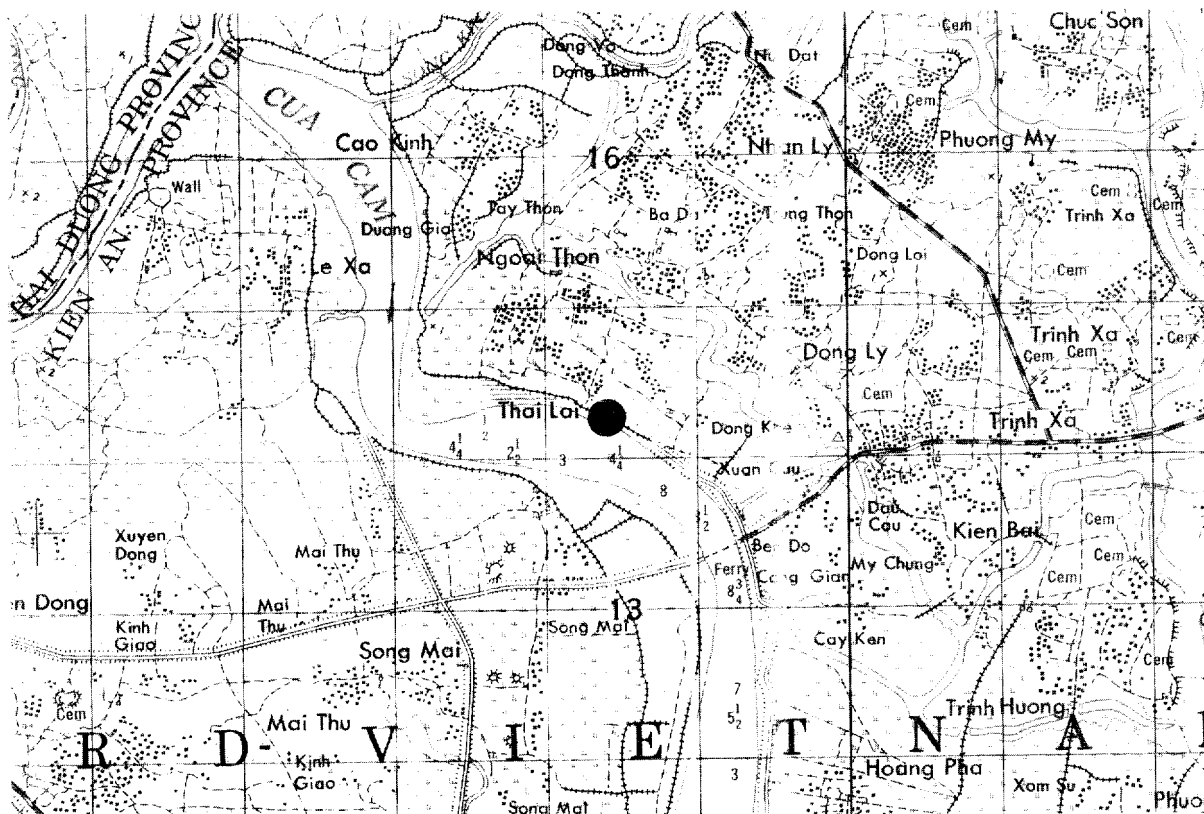
ESTIMATED CAPACITY: TANK 120 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6373 IV, 3D ED, JAN 61 (U)
AMS SERIES JOG(G) 1501, SHEET IF 48-16, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:



25X1D



819

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25X1

25X1

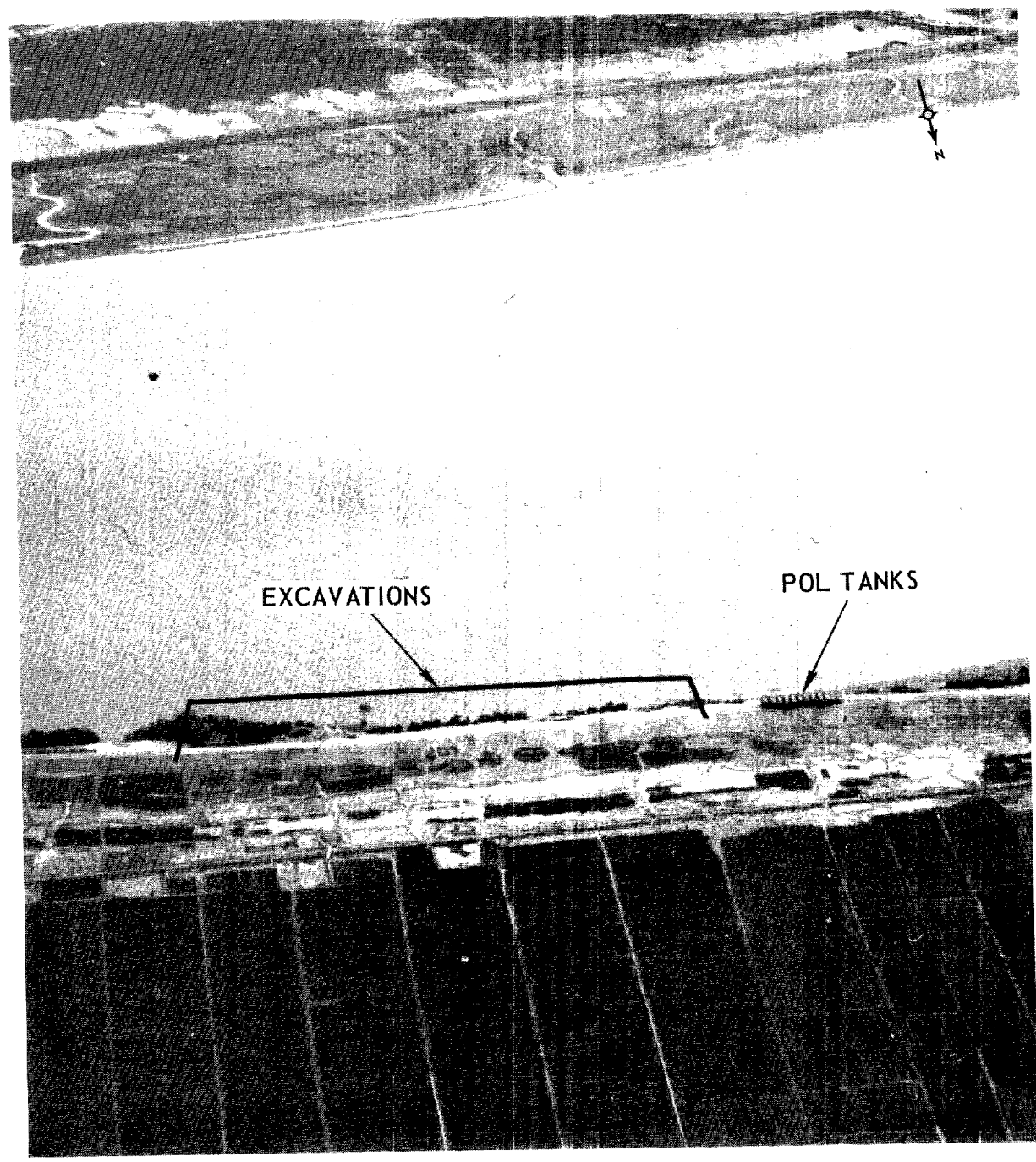
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R-218/66

THAI LAI PETROLEUM PRODUCTS STORAGE

XJ684143
UTM COORDINATES

2055N 10637E
GEOGRAPHIC COORDINATES



25X1C

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25X1G Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

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R-218/66

25X1A

BE NUMBER

WG593166
UTM COORDINATES

1908N 10534E
GEOGRAPHIC COORDINATES

NAME: YEN HAU PETROLEUM PRODUCTS STORAGE PUG

LOCATION: 0.5 NM NNW OF YEN HAU, 0.3 NM EAST OF ROUTE 116, AND 4 NM EAST OF ROUTE 1A

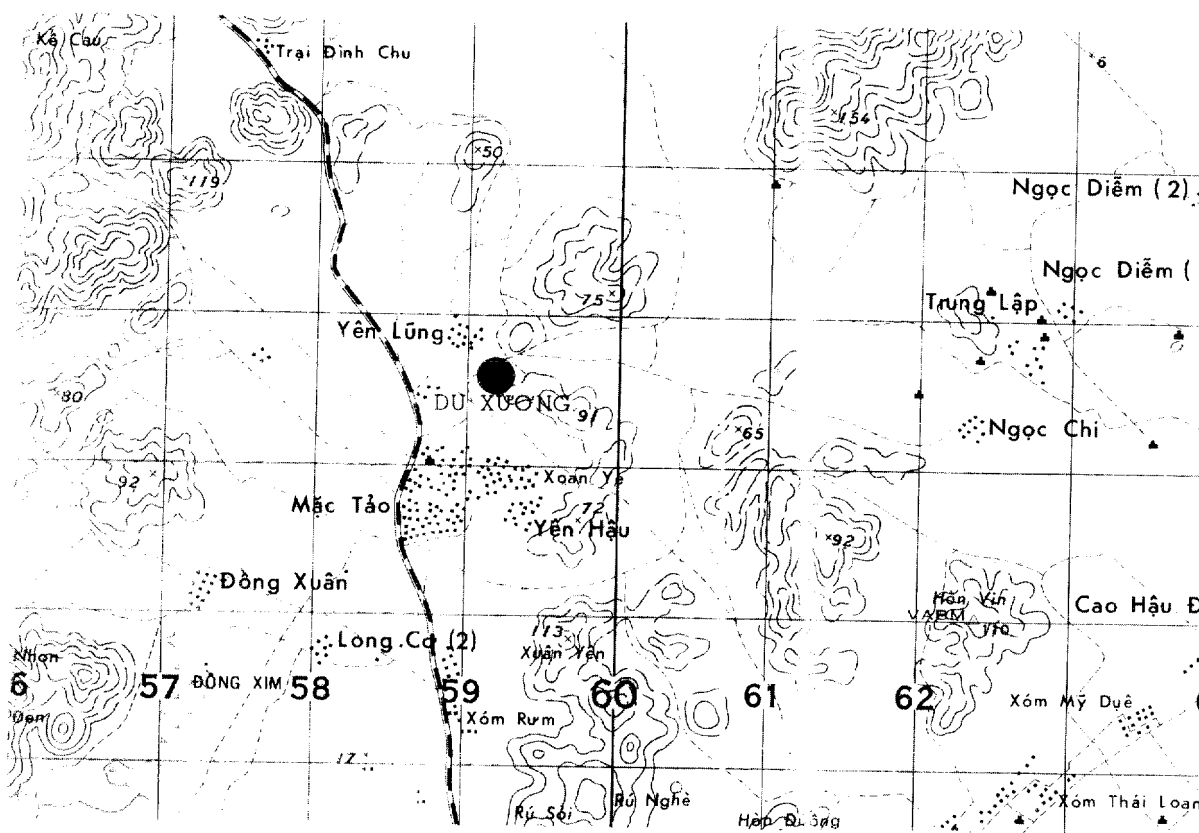
DESCRIPTION: STORAGE AREA CONSISTS OF 50 BURIED TANKS, 20 OPEN EXCAVATIONS, AND APPROXIMATELY 2,000 POL DRUMS SCATTERED ALONG LOOP ROADS.

ESTIMATED CAPACITY: TANK 600 MT DRUM 400 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6168 III, 1ST ED, NOV 62 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-3, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

25X1D



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25X1

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25X125X1C

R-213/66

YEN HAU PETROLEUM PRODUCTS STORAGE PUG

WG593166

1908N 10534E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1

25X1C

CONFIDENTIAL

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

R-218/66

25X1A

BE NUMBER

XJ676195
UTM COORDINATES

2058N 10636E
GEOGRAPHIC COORDINATES

NAME: THANH LANG PETROLEUM PRODUCTS STORAGE PUC

LOCATION: 0.3 NM NNE OF THANH LANG AND 8 NM NW OF HAI PHONG

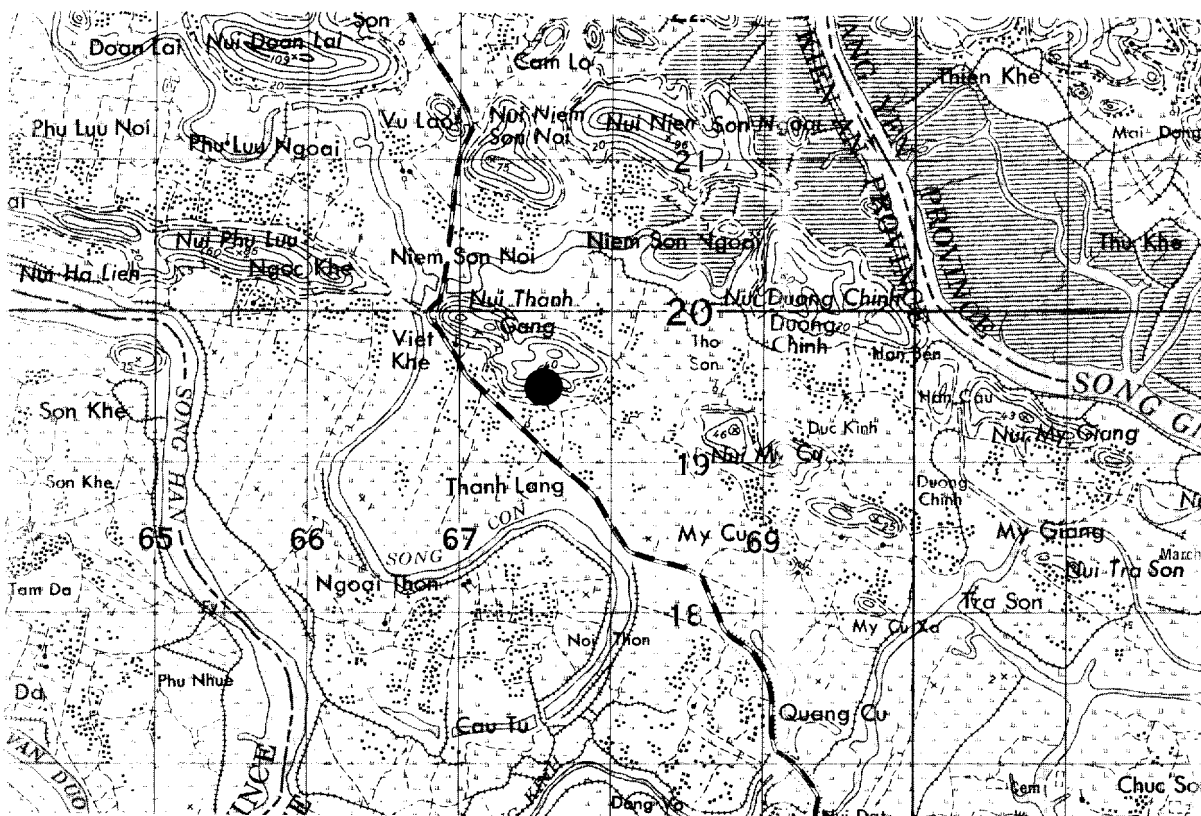
DESCRIPTION: STORAGE AREA CONTAINS 32 BURIED TANKS LIGHTLY OVERGROWN WITH VEGETATION, 5 UNBURIED TANKS, AND APPROXIMATELY 3,000 DRUMS.

ESTIMATED CAPACITY: TANK 444 MT DRUM 600 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6373-IV, 3D ED, JAN 61 (U)
AMS SERIES JOG(G) 1501, SHEET IF 48-16, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



B23

25X1C

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Approved For Release 2003/08/07 : CIA-RDP78B04560A005500010027-9

25X1 25X1C

R-218/66

THANH LANG PETROLEUM PRODUCTS STORAGE PUG

XJ676195

2058N 10636E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1

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25X1C

R-218/66

25X1A

WJ846182
UTM COORDINATES

2057N 10548E
GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS STORAGE UG THANH LIET (AREA 1)

LOCATION: 0.3 NM WNW OF THANH LIET AND 4 NM SSW OF HA NOI

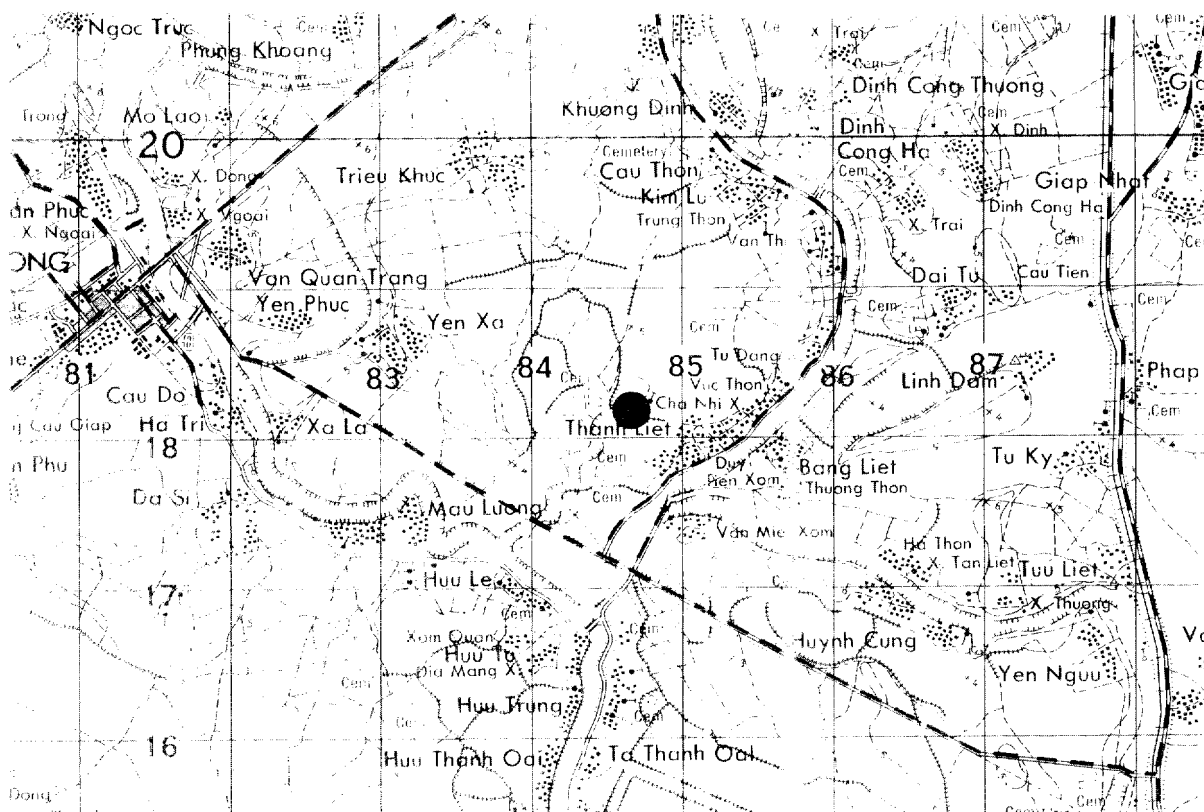
DESCRIPTION: SITE CONTAINS 30 POL TANKS BURIED IN PAIRS, 13 TANKS ABOVE-GROUND, 2 EXCAVATIONS, AND 1 POL TRUCK. THIS IS THE FIRST KNOWN INSTANCE OF POL TANKS BURIED IN A GRAVEYARD.

ESTIMATED CAPACITY: TANK 516 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6173 I, 3D ED, MAR 61 (U)
AMS SERIES JOG(A) 1501, SHEET 1 F 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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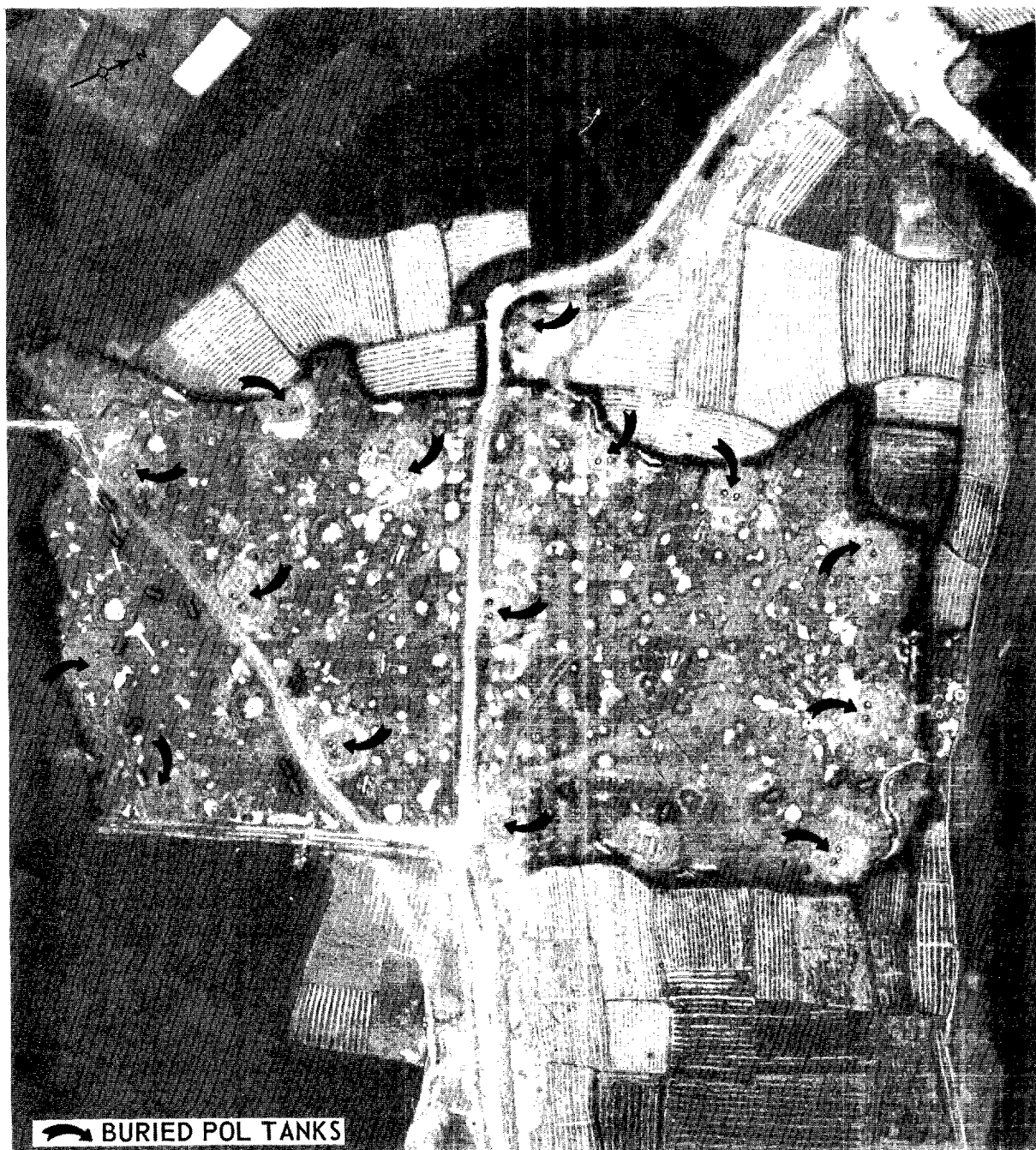
35Y16 125
3/08/04 16 01A RDR7

25X1 25X1C

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R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE UG THANH LIET (AREA 1)
WJ846182 2057N 10548E
UTM COORDINATES GEOGRAPHIC COORDINATES



25X1C

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25X1

25X1 25X1C

R-218/6b

25X1A

REFERENCES

WJ843191
UTM COORDINATES

2058N 10548E
GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS STORAGE UG THANH LIET (AREA 2)

LOCATION: 0.7 NM NW OF THANH LIET AND 3.6 NM SS. OF HA NOI

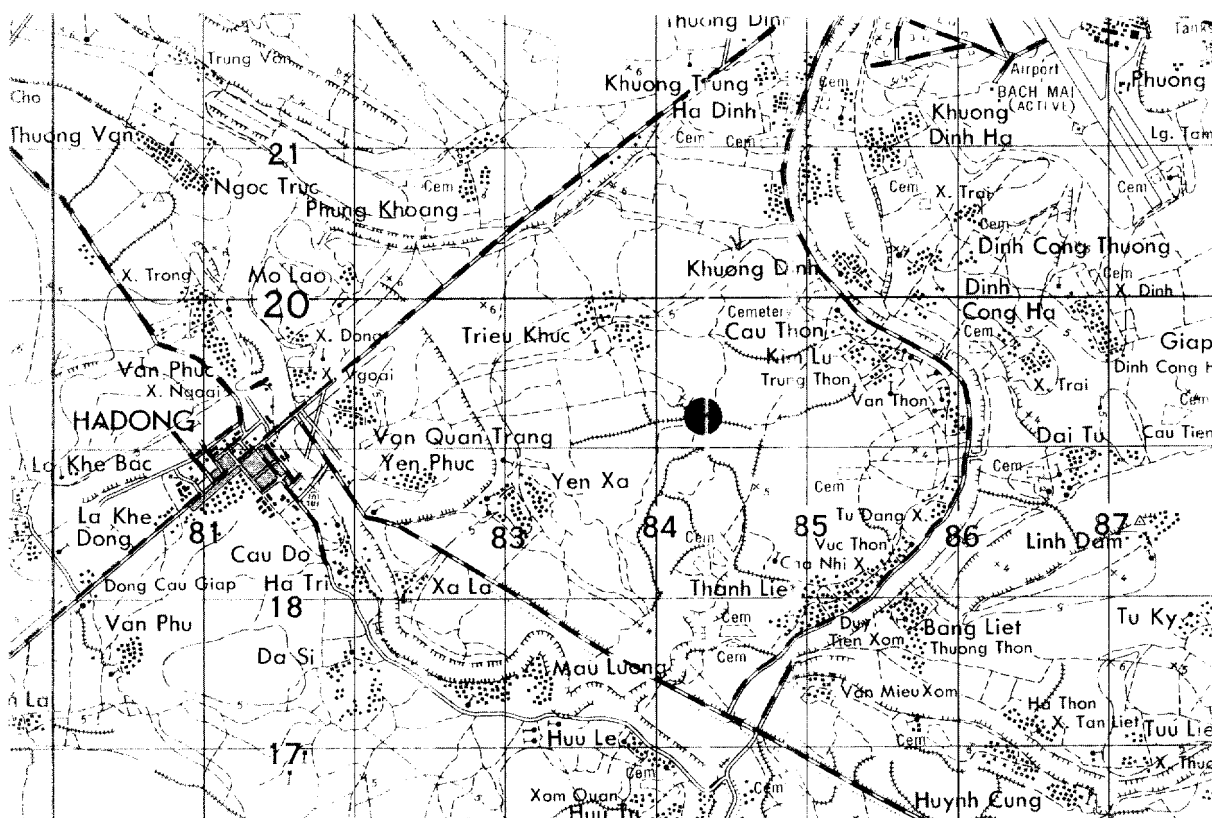
DESCRIPTION: SITE LOCATED IN A GRAVEYARD CONTAINS 2 BURIED TANKS, 8 UNBURIED TANKS, AND 24 EXCAVATIONS.

ESTIMATED CAPACITY: TANK 120 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6173 I, 3D ED, MAR 61 (U)
AMS SERIES JOG(A) 1501, SHEET NF 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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25X1

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R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE UG THANH LIET (AREA 2)
WJ843191

2058N 10548E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1C
25X1

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R-218/66

25X1A

BE NUMBER

UTM COORDINATES

2053N 10553E
GEOGRAPHIC COORDINATES

NAME: BANG SO PETROLEUM PRODUCTS STORAGE PUG

LOCATION: 0.3 NM EAST OF BANG SO AND 9 NM SSE OF HA NOI ON WEST BANK OF THE RED RIVER

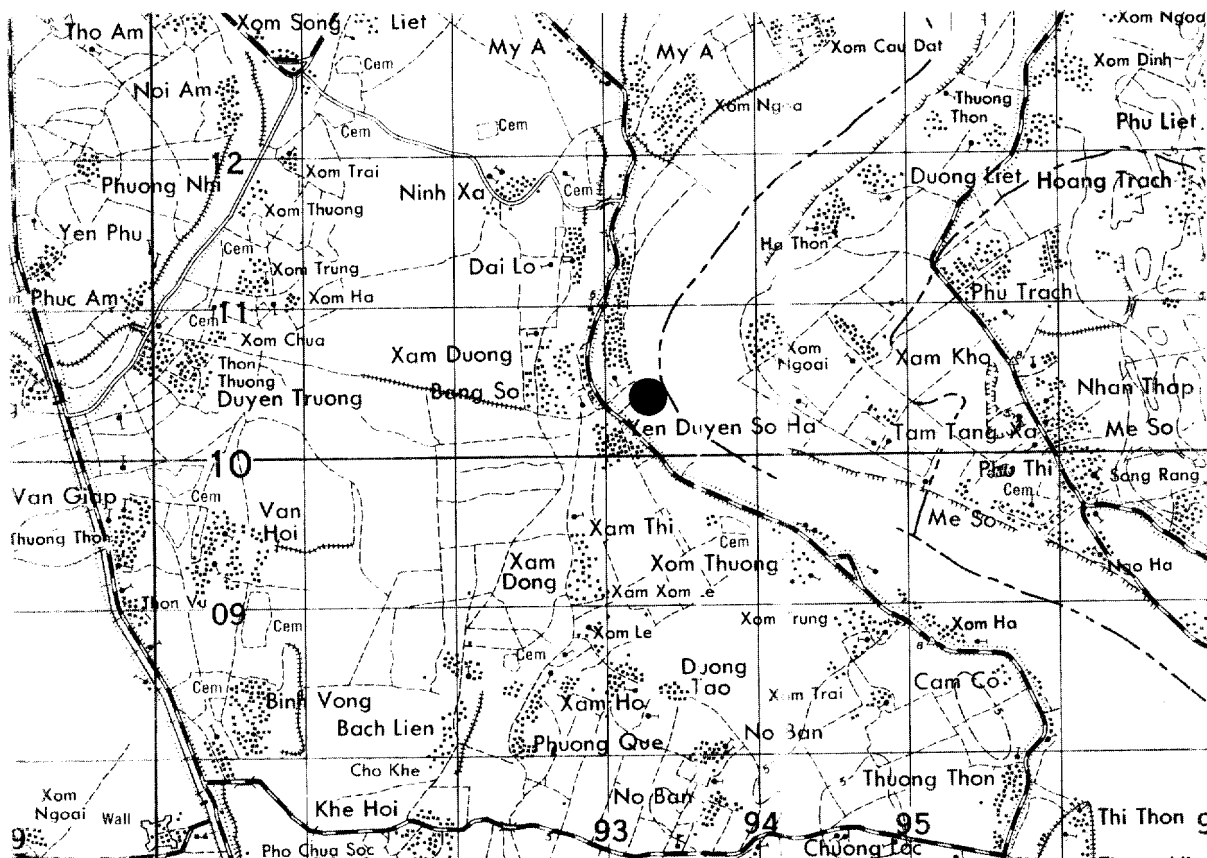
DESCRIPTION: STORAGE SITE CONTAINS 6 LARGE POL TANKS, 7 PROBABLY BURIED POL TANKS, AND 17 EXCAVATIONS.

ESTIMATED CAPACITY: TANK 234 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6173 I, 3D ED, MAR 61 (U)
AMS SERIES JOG(C) 1501, SHEET 1:48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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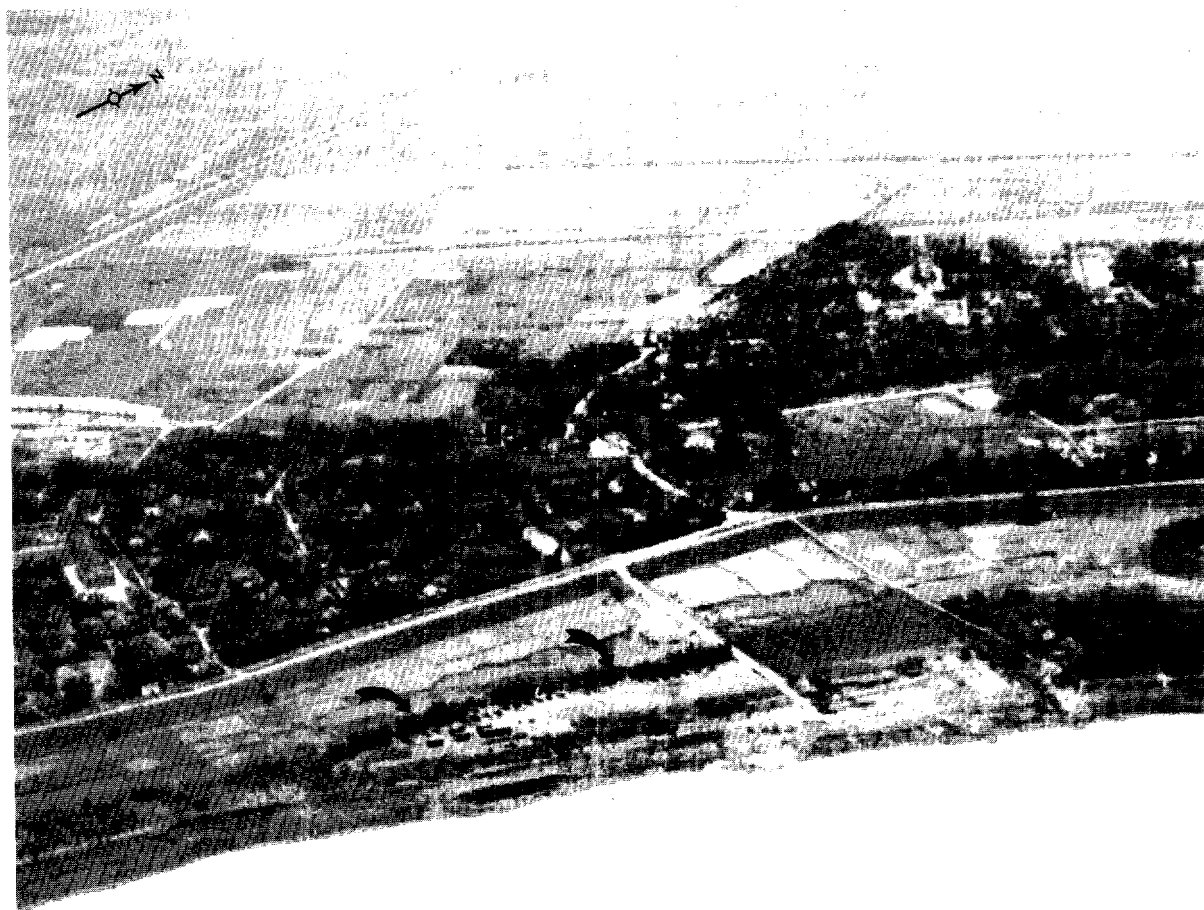
BANG SO PETROLEUM PRODUCTS STORAGE PUG

WJ932103

2053N 10553E

UTM COORDINATES

GEOGRAPHIC COORDINATES



 BURIED POL TANKS

B30

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25X1

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R-218/65

25X1A

[REDACTED]
GE NUMBER

WE761351
UTM COORDINATES

1918N 10543E
GEOGRAPHIC COORDINATES

NAME: SON CHAU PETROLEUM PRODUCTS STORAGE PUG

LOCATION: 0.7 NM SOUTH OF SON CHAU AND IMMEDIATELY WEST OF ROUTE 1A AND THE THANH HOA/VINH RAIL LINE

DESCRIPTION: STORAGE AREA CONTAINS AT LEAST 24 BURIED TANKS, 4 UNBURIED TANKS, AND 4 EXCAVATIONS. [REDACTED] REVEALS 32 BURIED TANKS, 10 UNBURIED TANKS, APPROXIMATELY 600 DRUMS, AND 2 RAIL CARS AT RAIL SIDING.

25X1D

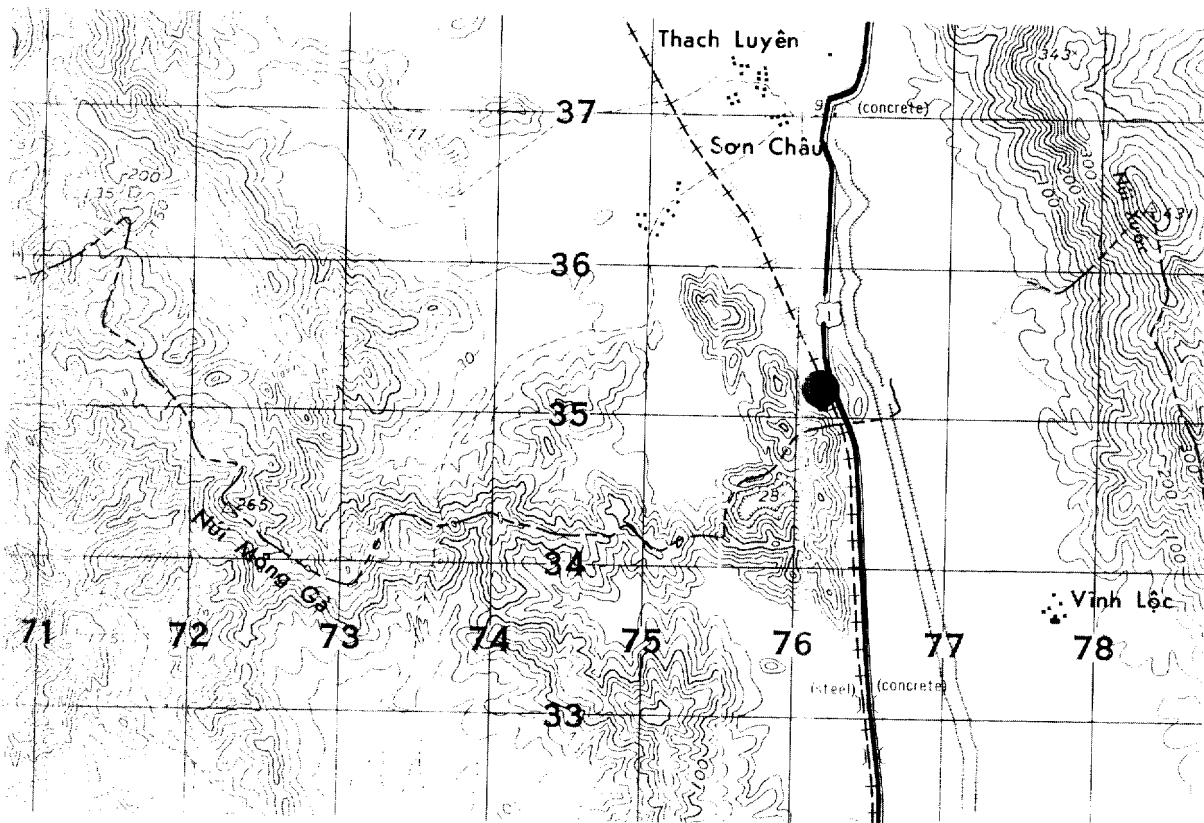
ESTIMATED CAPACITY: TANK 336 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6108-IV, 1ST ED, AUG 63 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-3, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

[REDACTED]

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[REDACTED]

25X1

CONFIDENTIAL

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

P-218/66

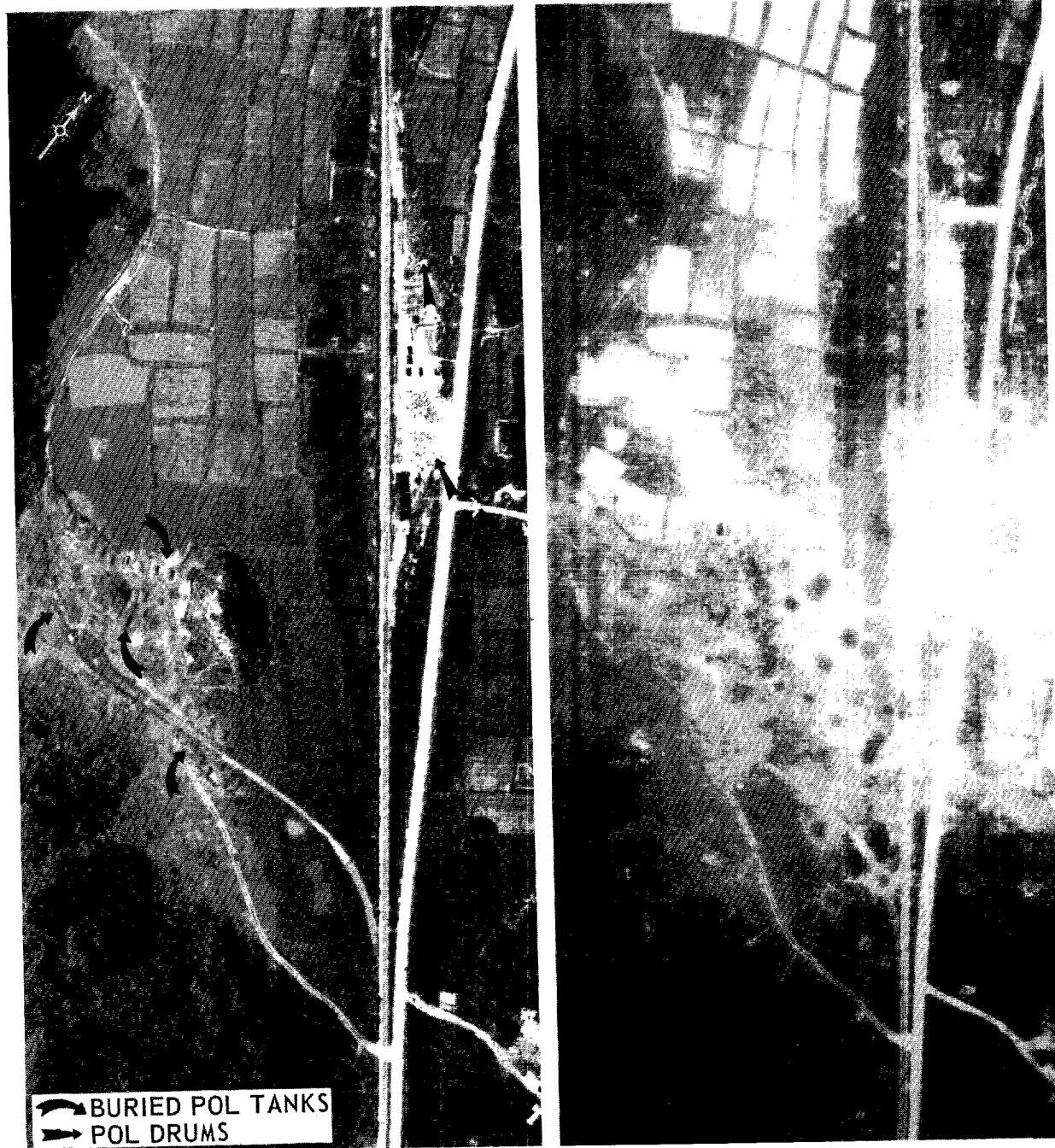
SON CHAU PETROLEUM PRODUCTS STORAGE PUG

WE761351

1918N 10543E

UTM COORDINATES

GEOGRAPHIC COORDINATES



B32

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25X1C

25X1

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25X1C

R-218/64

25X1A

BE NUMBER

XJ359660
UTM COORDINATES

2123N 10618E
GEOGRAPHIC COORDINATES

NAME: KEP PETROLEUM PRODUCTS STOPAGE

LOCATION: 1.7 NM SE OF KEP, ROUTE 1A, AND THE HO NOI/PING-HSIANG RAIL LINE AND 0.2 NM EAST OF ROUTE 181

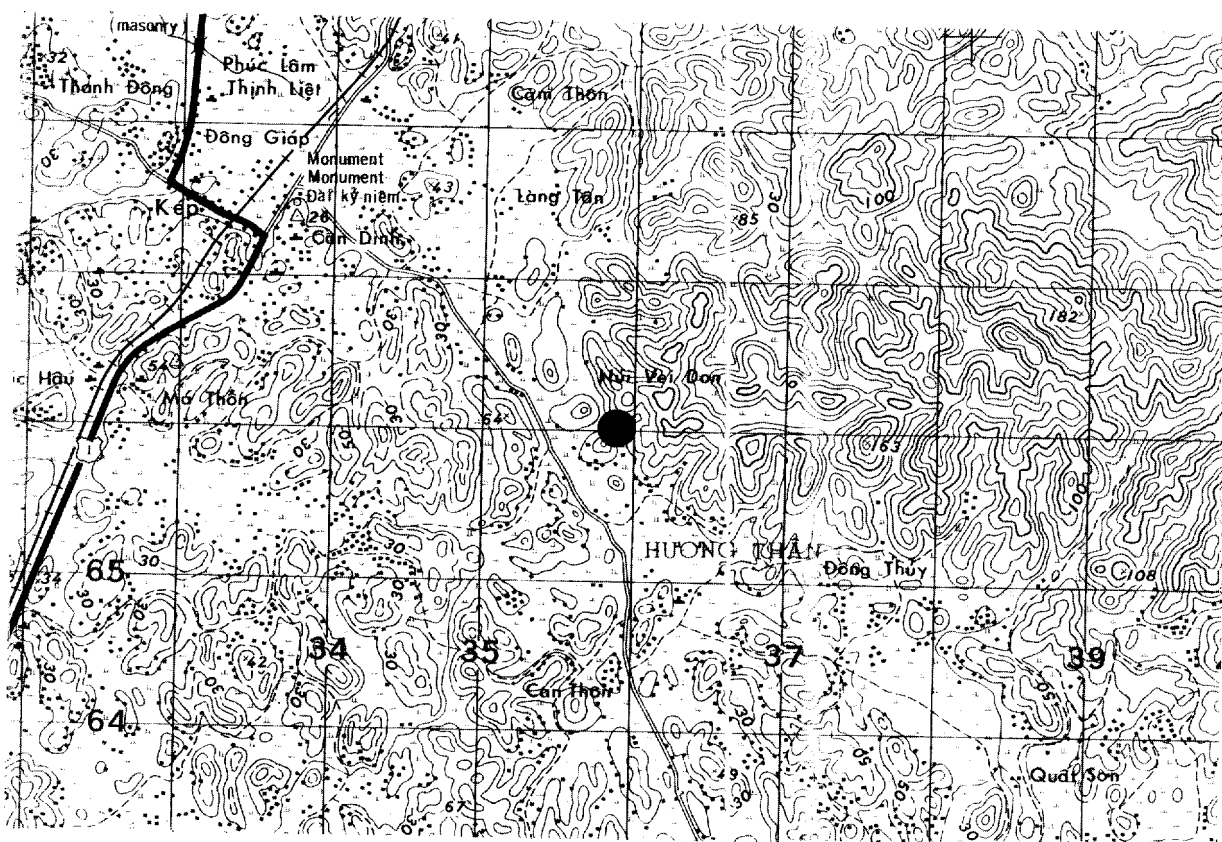
DESCRIPTION: SITE LOCATED AMONG 3 LOW HILLS CONTAINS 119 BURIED TANKS IN 6 ROWS, 1 UNBURIED TANK, AND AT LEAST 3,500 DRUMS.

ESTIMATED CAPACITY: TANK 1,440 MT DRUM 700 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6275-II, 1ST ED, JAN 64 (U)
AMS SERIES JOG(G) 1501, SHEET 1-48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



1333

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KEP PETROLEUM PRODUCTS STORAGE

XJ359660
UTM COORDINATES

2123N 10618E
GEOGRAPHIC COORDINATES



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25X1

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25X1

25X1C

R-218/66

25X1A

8E NUMBER

WJ907360
UTM COORDINATES

2107N 10552E
GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 1)

LOCATION: IMMEDIATELY EAST OF X. BAI, 0.7 NM SS. OF DUC NOI, AND 6.3 NM NORTH OF HA NOI

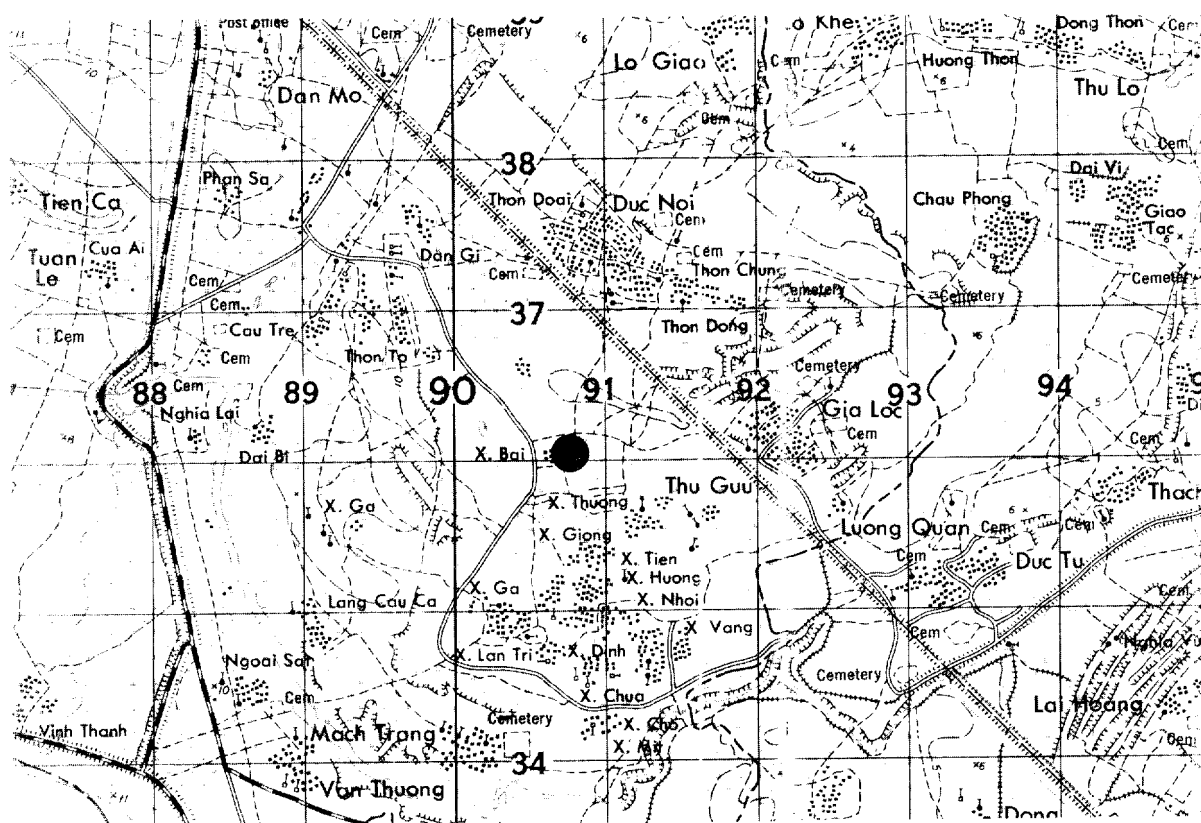
DESCRIPTION: AREA CONTAINS 14 LARGE BURIED TANKS, 9 PROBABLY STANDARD BURIED TANKS, 1 EXCAVATION, APPROXIMATELY 3,000 THIRTY-GAL-TYPE DRUMS, AND APPROXIMATELY 1,750 FIFTY-FIVE-GAL-TYPE DRUMS.

ESTIMATED CAPACITY: TANK 458 MT DRUM 650 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3DED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET 4F 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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25X1

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25X1

R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 1)

WJ907360

2107N 10552E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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R-218/66

BE NUMBER

2107N 10552E
GEOGRAPHIC COORDINATES

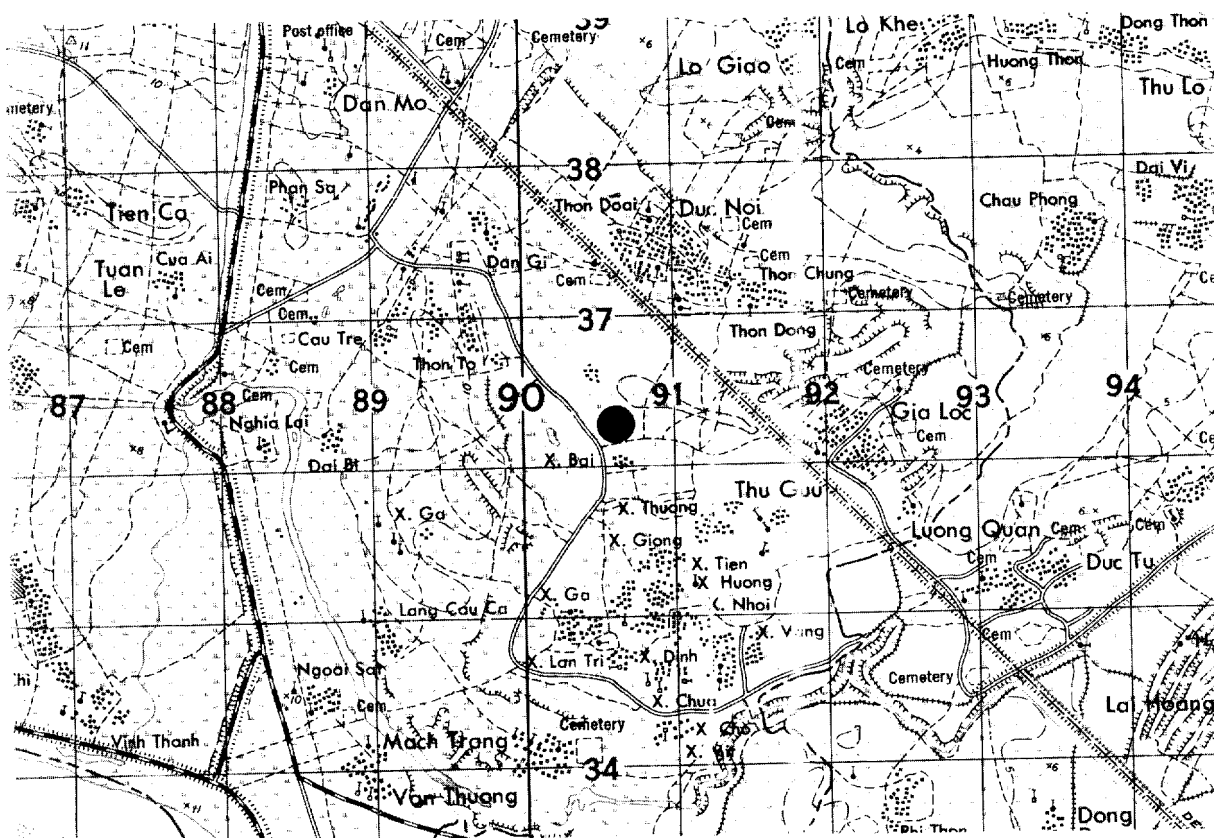
LOCATION: JUST NORTH OF X. BAI, 0.7 NM SSW OF DUC NOI, AND 6.4 NM NORTH OF HA NOI

DESCRIPTION: AREA CONTAINS 4 LARGE BURIED AND 3 LARGE UNBURIED TANKS, 11 STANDARD BURIED AND 12 STANDARD UNBURIED TANKS, AND 7 LARGE AND 6 STANDARD EXCAVATIONS.

ESTIMATED CAPACITY: TANK 451 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET DF 48-11, 1ST ED, JUN 65 (U)

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R-218/b6

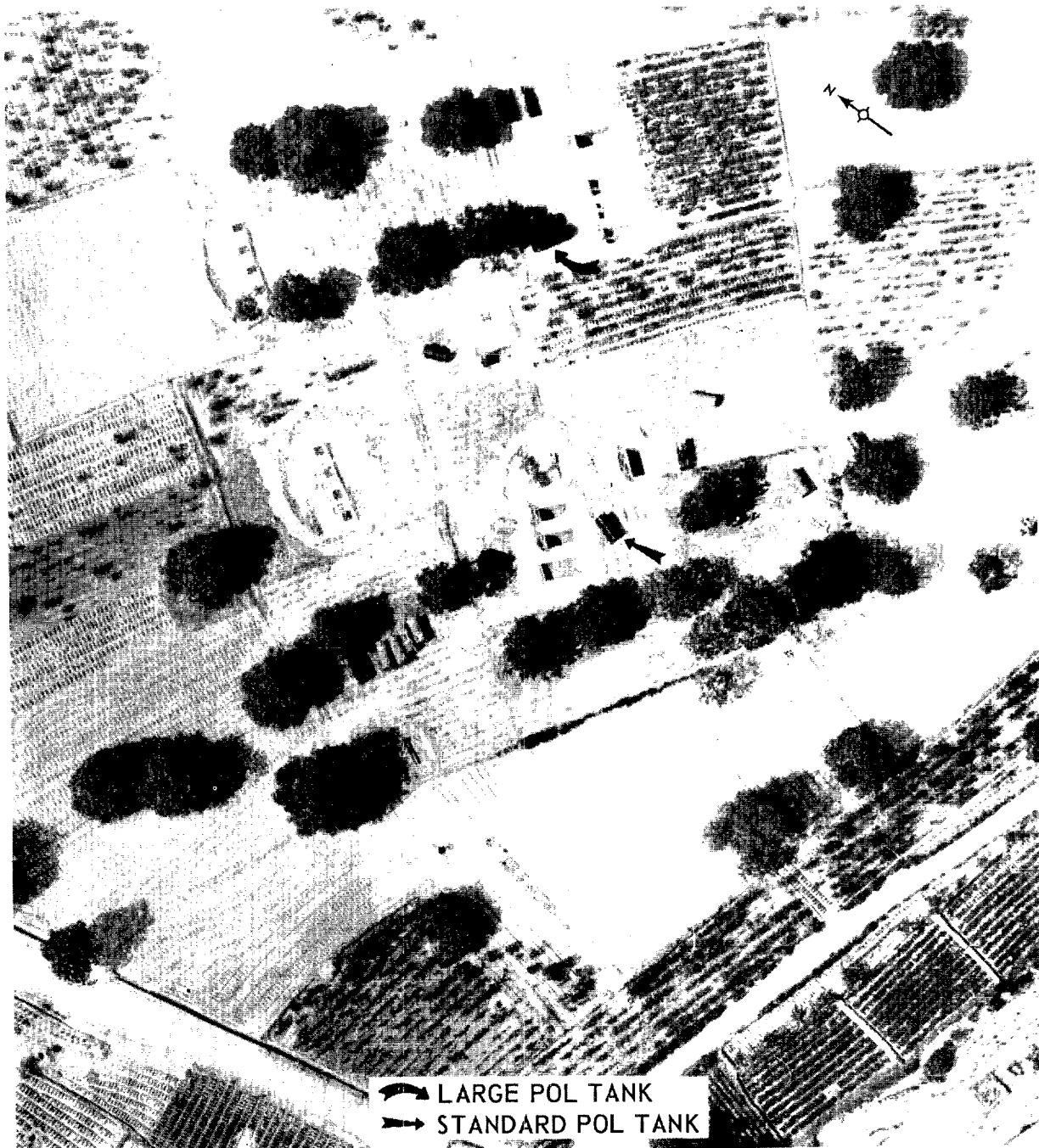
HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 2)

WJ906362

2107N 10552E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1C

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R-218/65

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2107N 10552E
GEOGRAPHIC COORDINATES

LOCATION: 0.6 NM SW OF DUC NOI AND 6.6 NM NORTH OF HA NOI

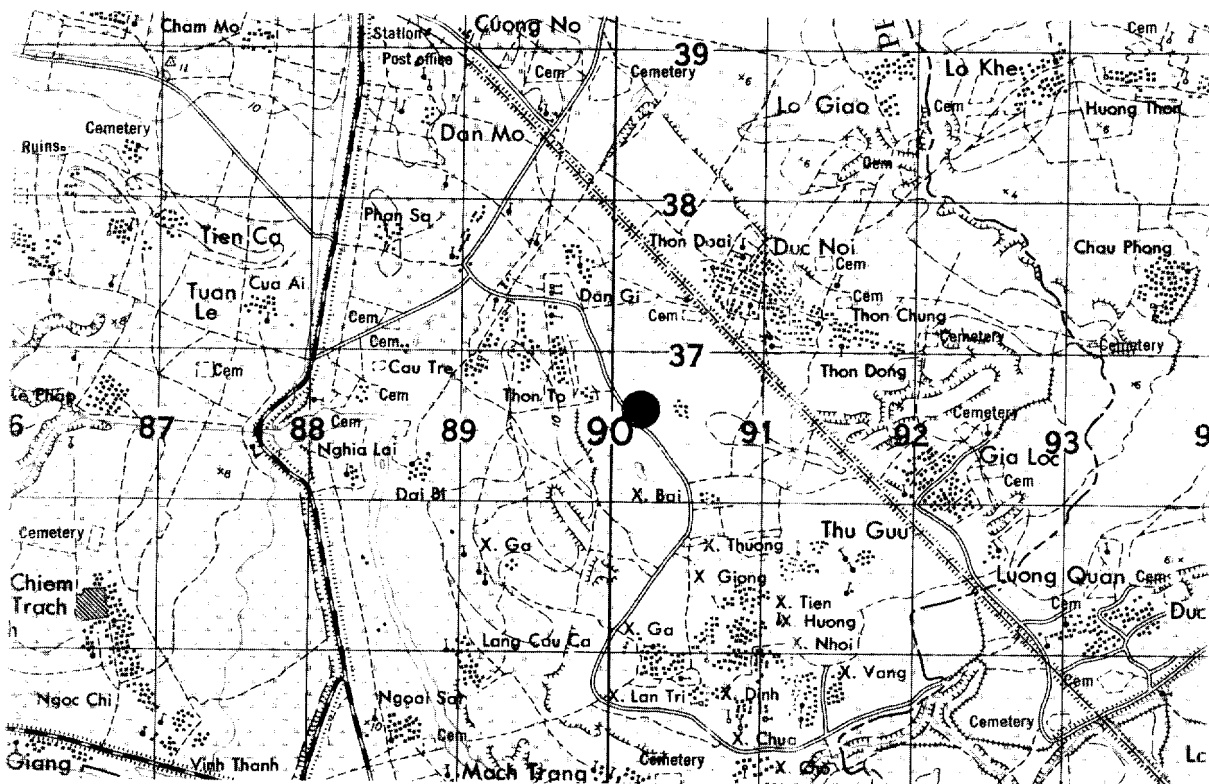
DESCRIPTION: AREA CONTAINS 25 DISPERSED BURIED TANKS. ATTEMPTS HAVE BEEN MADE TO CONCEAL TANKS BY PLANTING OVER THEM. SIXTEEN TRUCKS, 6 PROBABLY MODIFIED TO CARRY POL TANKS, ARE 0.2 NM EAST OF AREA.

ESTIMATED CAPACITY: TANK 300 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



25X1

25X1A

R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 3)

WJ902366

2107N 10552E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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R-218/66

25X1A

BE NUMBER

WJ897357
UTM COORDINATES

2107N 10551E
GEOGRAPHIC COORDINATES

NAME: HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 4)

LOCATION: 1.2 NM SW OF DUC NOI AND 6.1 NM NORTH OF HA NOI

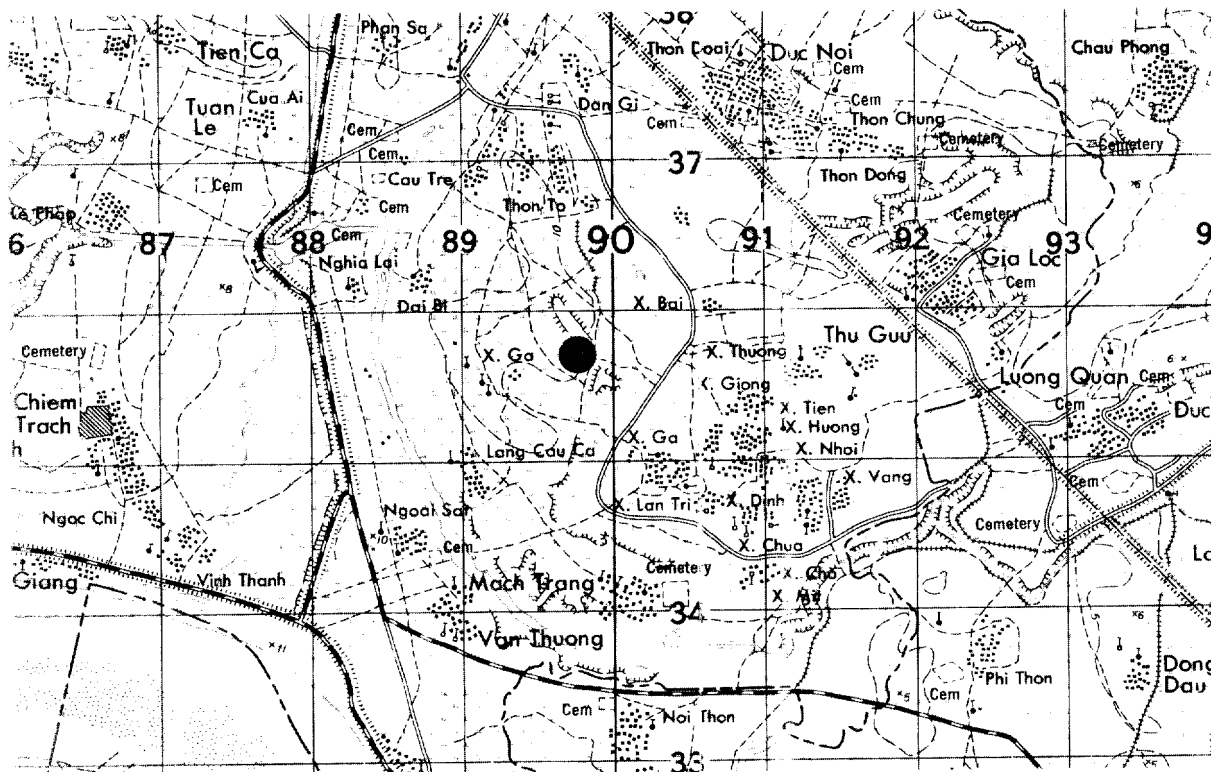
DESCRIPTION: AREA CONTAINS AT LEAST 6 BURIED TANKS AND 5 EXCAVATIONS. PART OF THE AREA IS CONCEALED BY TREES.

ESTIMATED CAPACITY: TANK 72 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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25X1

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25X1C

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R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 4)
WJ897357 2107N 10551E
UTM COORDINATES GEOGRAPHIC COORDINATES



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R-218/66

25X1A

BE NUMBER

WJ754908
UTM COORDINATES

2137N 10543E
GEOGRAPHIC COORDINATES

NAME: CU VAN PETROLEUM PRODUCTS STORAGE

LOCATION: 1 NM SSW OF CU VAN AND 7.1 NM NW OF THAI NGUYEN

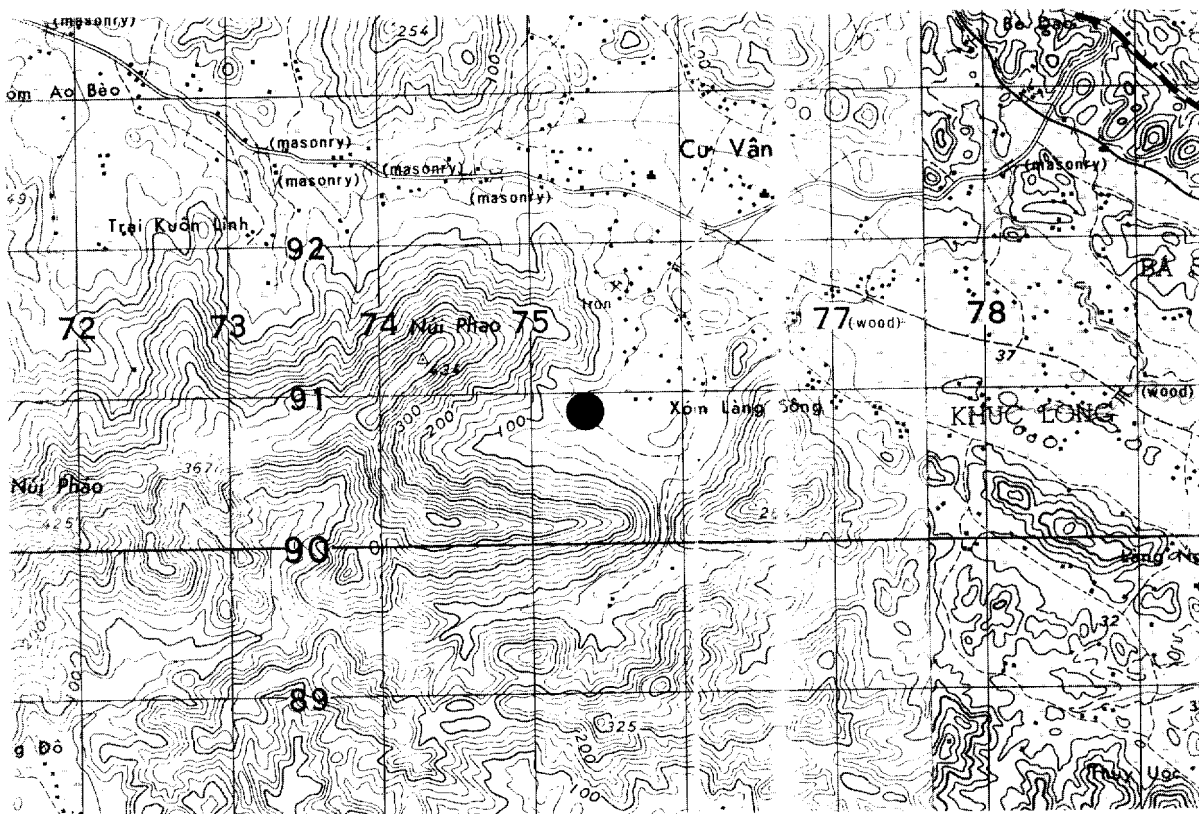
DESCRIPTION: SITE CONTAINS 94 BURIED TANKS. ONE LARGE LINEAR EXCAVATION IS LOCATED ALONG THE WEST SIDE OF THE SUPPORT ROAD.

ESTIMATED CAPACITY: TANK 1,128 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6175-IV, 1ST ED, SEP 63 (U)
AMS SERIES JOG(G) 1501, SHEET IF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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R-218/66

CU VAN PETROLEUM PRODUCTS STORAGE

WJ754908

2137N 10543E

UTM COORDINATES

GEOGRAPHIC COORDINATES



B44

25X1C

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25X1

CONFIDENTIAL

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1C

25X1

R-218/68

25X1A

BE NUMBER

WJ774926
UTM COORDINATES

2138N 10544E
GEOGRAPHIC COORDINATES

NAME: CU VAN PETROLEUM PRODUCTS STORAGE EAST UNDERGROUND

LOCATION: 0.6 NM EAST OF CU VAN AND 6.2 NM NW OF THAI NGUYEN

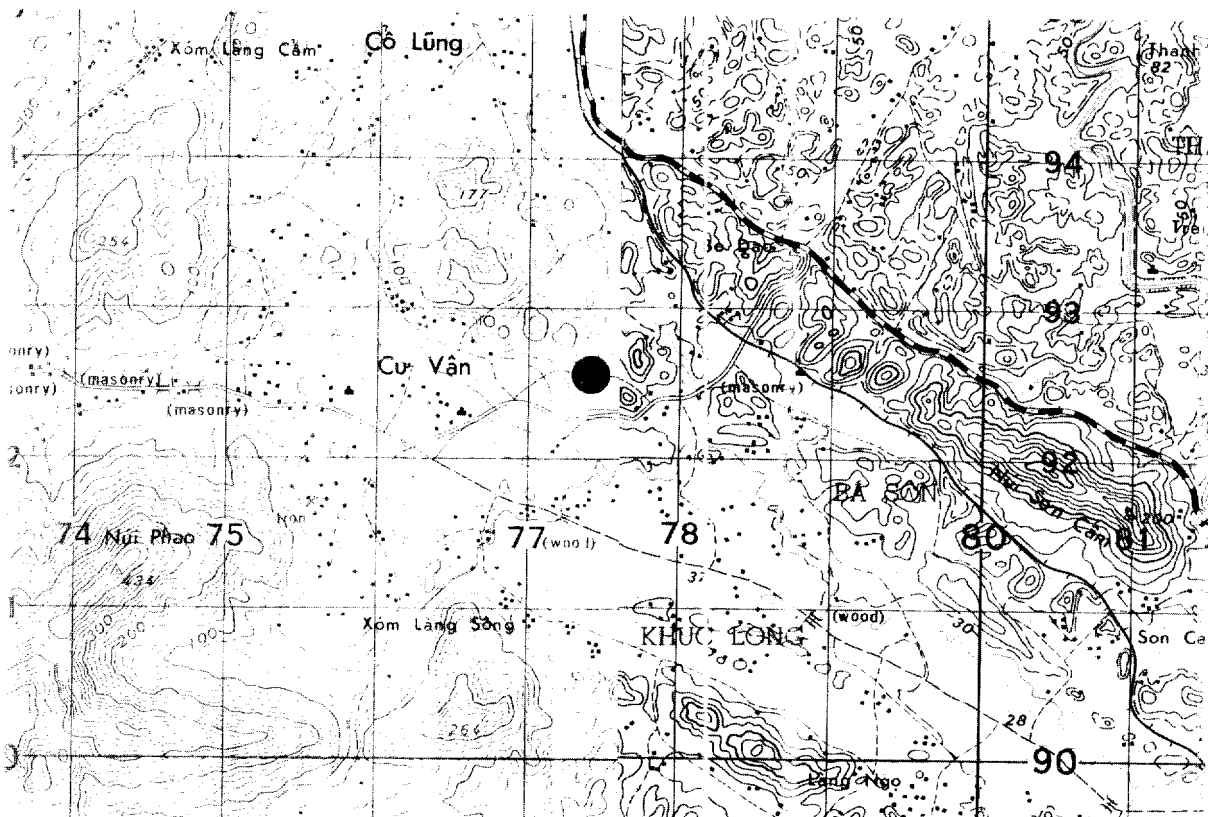
DESCRIPTION: AREA CONTAINS 45 BURIED TANKS ALONG A 0.2 NM SEGMENT OF A SECONDARY ROAD NORTH OF ROUTE 13A.

ESTIMATED CAPACITY: TANK 540 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6175-IV, 1ST ED, SEP 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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25X1C

25X1

CONFIDENTIAL

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

R-218/66

CU VAN PETROLEUM PRODUCTS STORAGE EAST UNDERGROUND

WJ774926

2138N 10544E

UTM COORDINATES

GEOGRAPHIC COORDINATES



B46

25X1C

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CONFIDENTIAL

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

CONFIDENTIAL

25X1

R-218/66

25X1A

BE NUMBER

XJ249708
UTM COORDINATES2126N 10612E
GEOGRAPHIC COORDINATES

NAME: DAO QUAN PETROLEUM PRODUCTS STORAGE EAST

LOCATION: 0.1 NM EAST OF DAO QUAN ON SOUTH BANK OF SONG THUONG (RIVER)

25X1D

DESCRIPTION: STORAGE AREA, [REDACTED]
 [REDACTED] IN PROCESS OF BEING ESTABLISHED, CONSISTS OF 28 BURIED TANKS, 6 CAMOUFLAGED ABOVEGROUND TANKS, 3 TANKS VISIBLE IN EXCAVATIONS, AND 1 OPEN EXCAVATION.

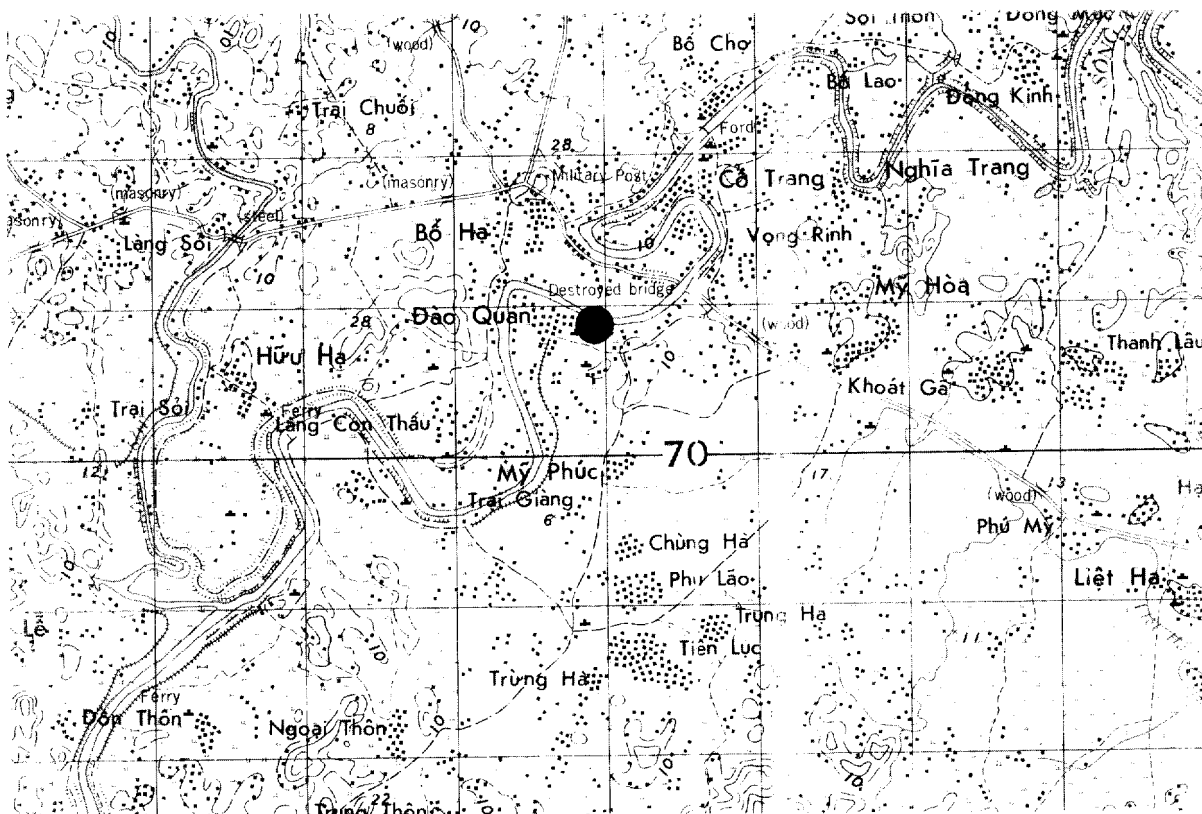
25X1D

ESTIMATED CAPACITY: TANK 444 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6275 III, 1ST ED, APR 64 (J)
 AMS SERIES JOG(G) 1501, SHEET IF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



047

25X1C

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CONFIDENTIAL

25X1

CONFIDENTIAL

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25X1

25X1C

R-218/66

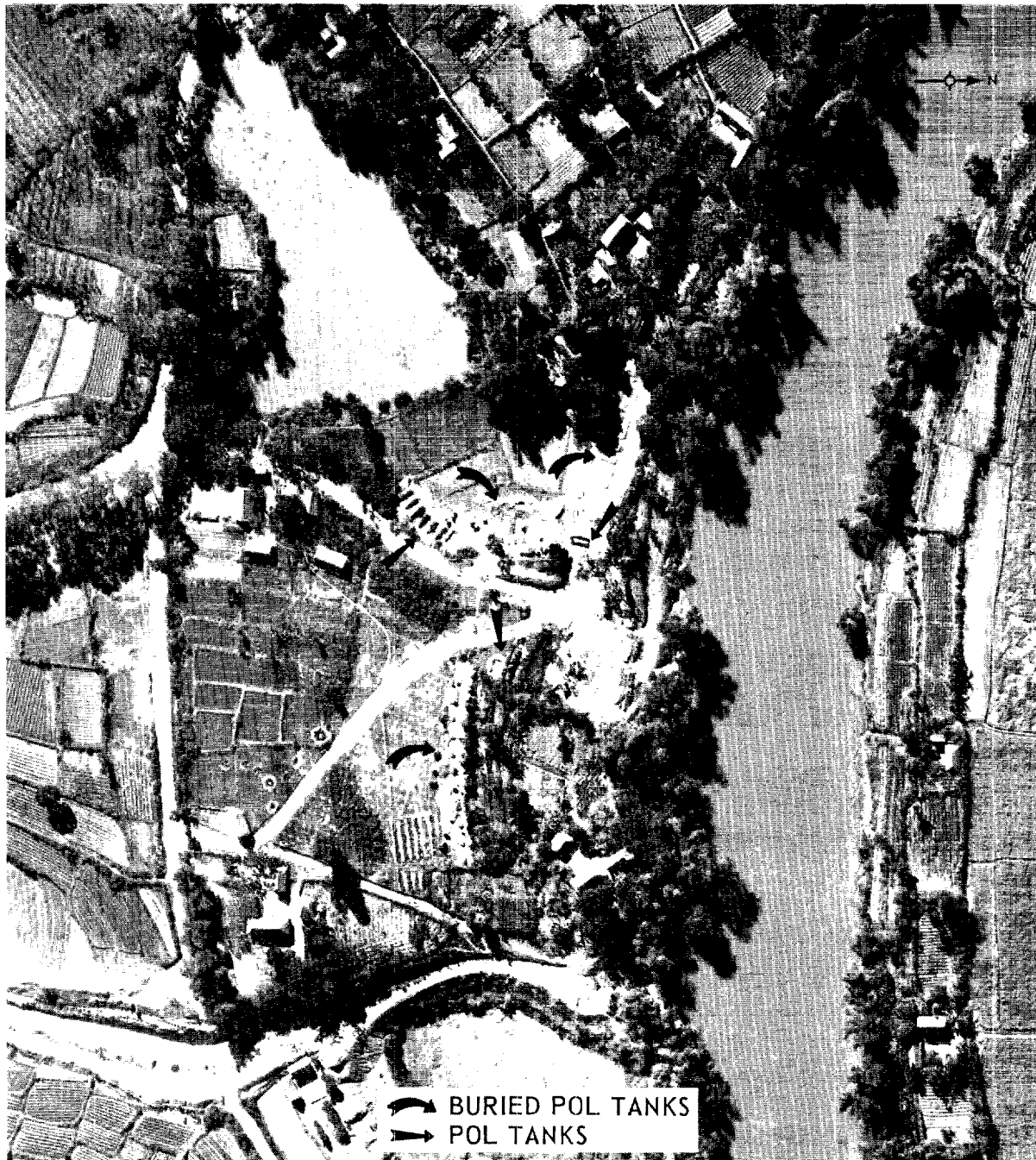
DAO QUAN PETROLEUM PRODUCTS STORAGE EAST

XJ249708

2126N 10612E

UTM COORDINATES

GEOGRAPHIC COORDINATES



B48

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25X1C

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25X1C

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25X1A

BE NUMBER

XJ240696
UTM COORDINATES

2125N 10611E
GEOGRAPHIC COORDINATES

NAME: DAO QUAN PETROLEUM PRODUCTS STORAGE WEST

LOCATION: 0.8 NM SSW OF DAO QUAN

DESCRIPTION: STORAGE SITE CONTAINS 30 BUNKERED FOL TANKS IN A SQUARE PATTERN ON THE SOUTH BANK OF THE SONG THUONG (STREAM).

25X1D

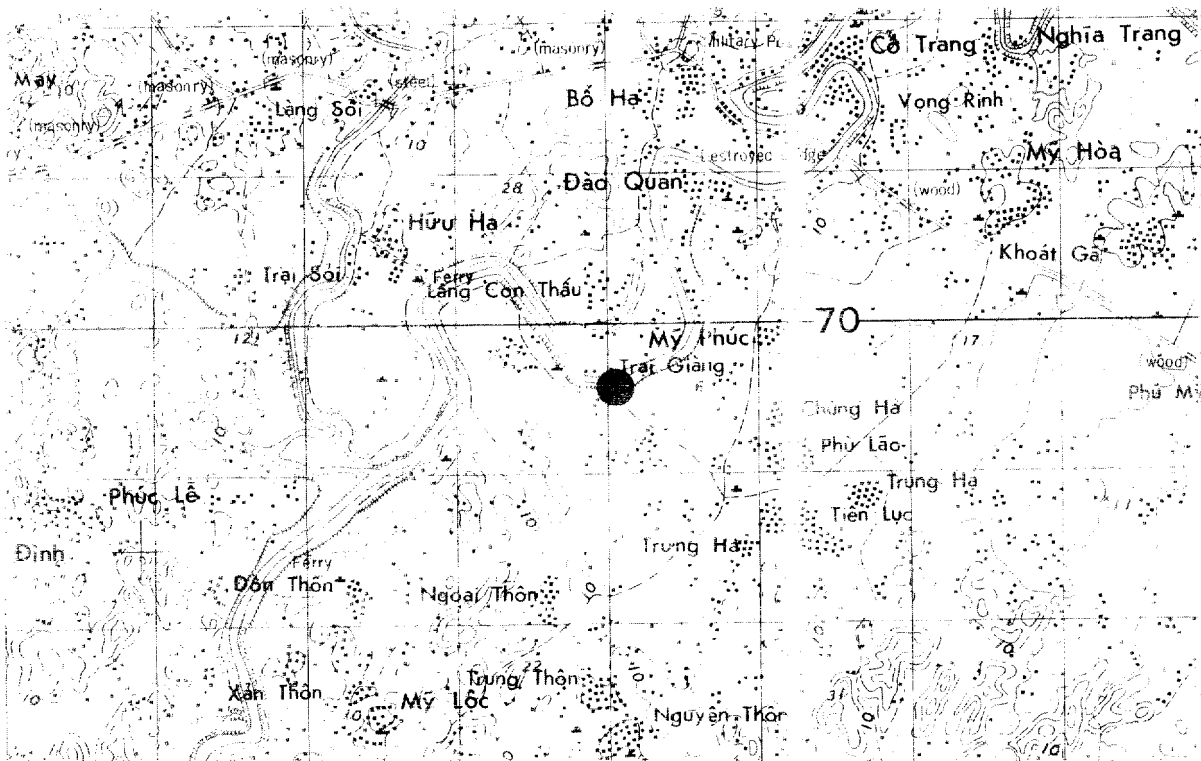
25X1D

ESTIMATED CAPACITY: TANK 360 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6275 III, 1ST ED, APR 64 (U)
AMS SERIES JOGCG 1501, SHEET 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



25X1C

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25X1

25X1 25X1C

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R-218/66

XJ240696
UTM COORDINATES

DAO QUAN PETROLEUM PRODUCTS STORAGE WEST
2125N 10611E
GEOGRAPHIC COORDINATES



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25X1 25X1C

R-218/66

25X1A

BE NUMBER

XH2/3612
UTM COORDINATES

2026N 10613E
GEOGRAPHIC COORDINATES

NAME: NAM DINH PETROLEUM PRODUCTS STORAGE PUG

LOCATION: 3 NM NE OF NAM DINH ON WEST BANK OF RED RIVER

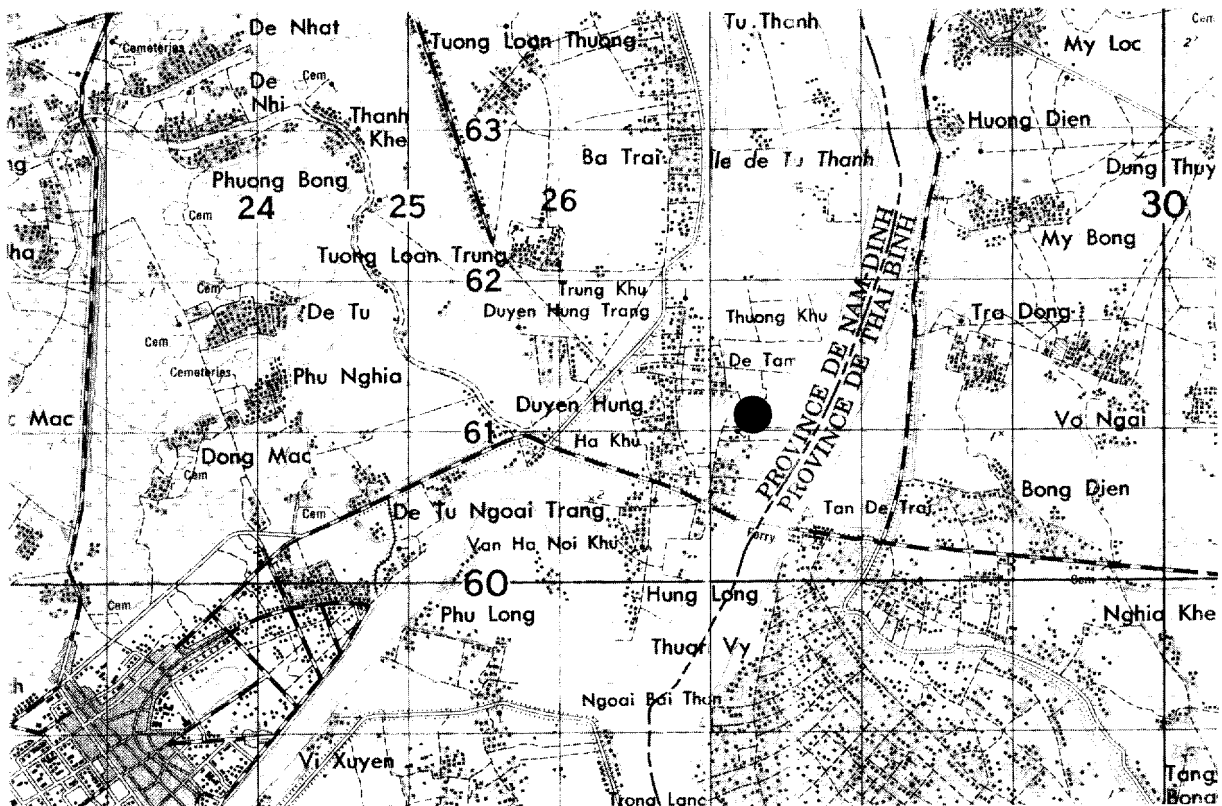
DESCRIPTION: STORAGE SITE CONSISTS OF 22 POL TANKS BURIED ON BOTH SIDES OF LOOP ROAD.

ESTIMATED CAPACITY: TANK 264 MT

MAP REFERENCES: AMS SERIES L/01, SHEET 62/2 II 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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25X1C

25X1

25X1C

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R-218/66

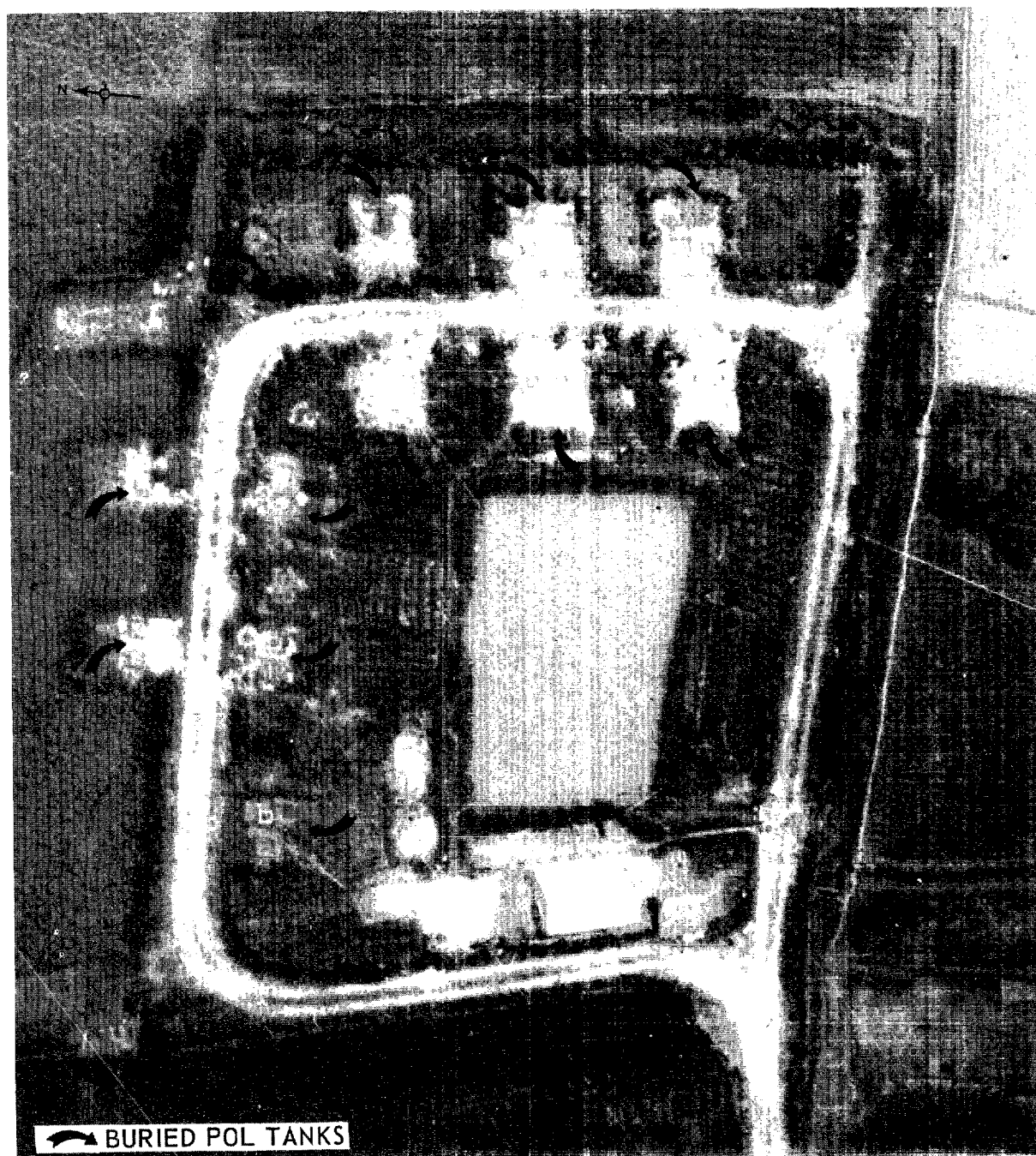
NAM DINH PETROLEUM PRODUCTS STORAGE PUG

XH273612

2026N 10613E

UTM COORDINATES

GEOGRAPHIC COORDINATES



B52

25X1C

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25X1

25X1

25X1C **CONFIDENTIAL** Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

R-218/66

TUNG TU PETROLEUM PRODUCTS STORAGE UNDERGROUND
WJ889767 2129N 10551E
UTM COORDINATES **GEOGRAPHIC COORDINATES**



B54

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25X1

25X1

25X1C

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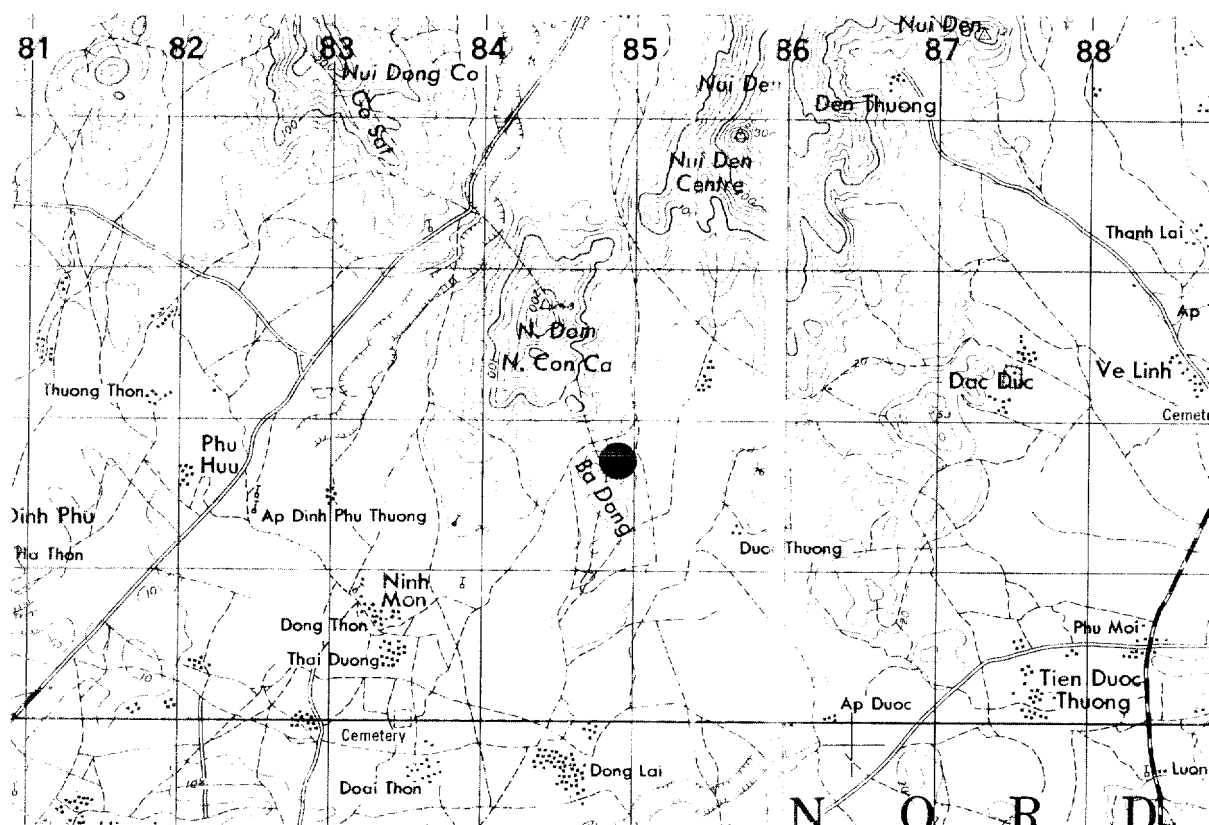
P-218/65

25X1A

BE NUMBER
UTM COORDINATES
 WJ849517

GEOGRAPHIC COORDINATES
 2116N 10549E
NAME: PHUC YEN AIRFIELD POL STORAGE AREA 1**LOCATION:** 2.9 NM NORTH OF PHUC YEN AIRFIELD**DESCRIPTION:** AREA CONSISTS OF 3 BUNKERS, EACH PROBABLY CONTAINING 5 TANKS, AND 5 TANKS IN OPEN EXCAVATIONS.**ESTIMATED CAPACITY:** TANK 240 MT
MAP REFERENCES: AMS SERIES L701, SHEET 6174-I. 3D ED, DEC 59 (U)
 AMS SERIES JOG(C) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)
PHOTO REFERENCE:

25X1D



1355

25X1C

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25X1

25X1C
25X1

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R-218/66

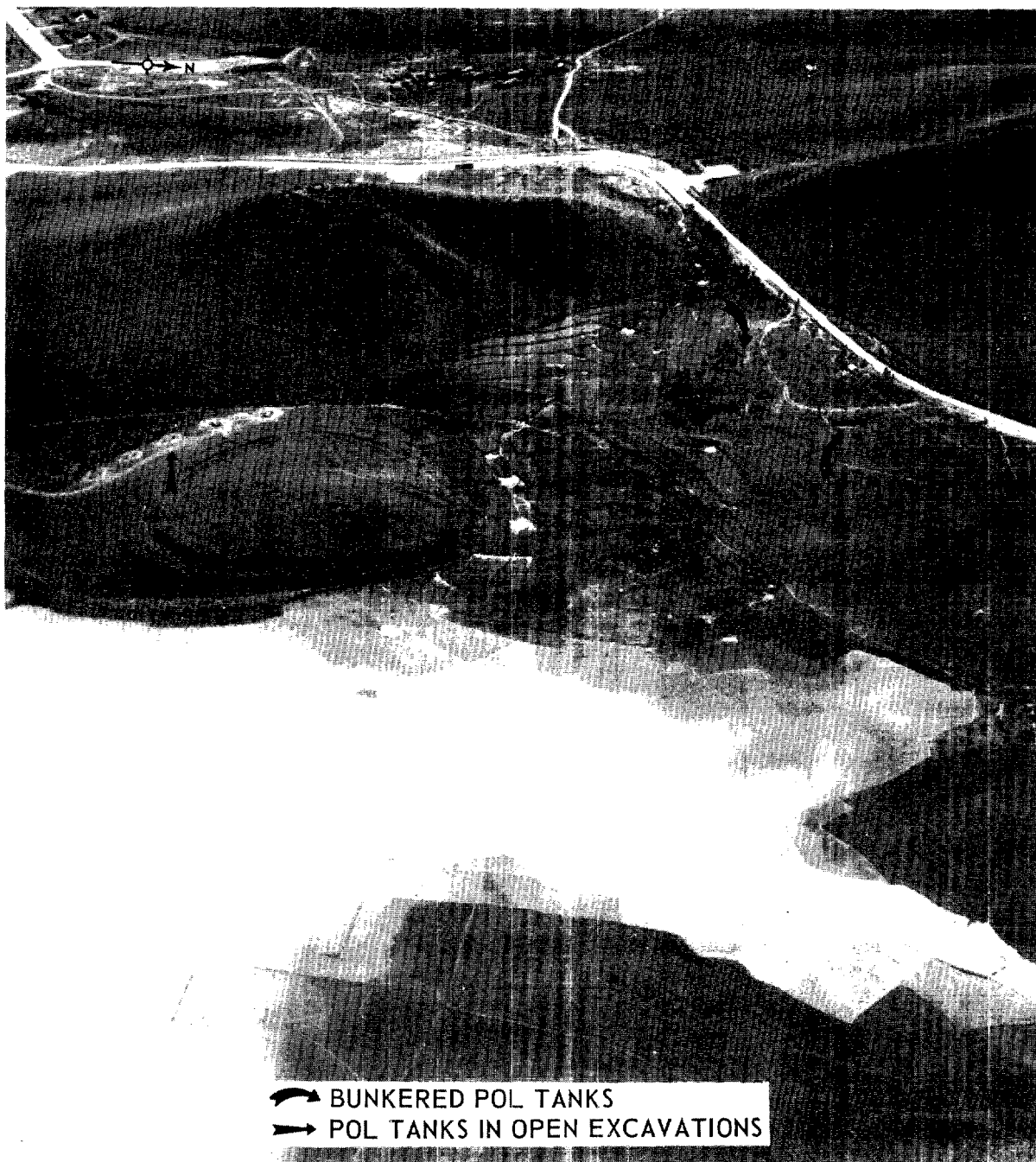
PHUC YEN AIRFIELD POL STORAGE AREA 1

WJ849517

2116N 10549E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1C

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25X1

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25X1

25X1C

25X1A

BE NUMBER

WJ862506
UTM COORDINATES

2115N 10549E
GEOGRAPHIC COORDINATES

NAME: FRED JEN AIRFIELD POL STORAGE AREA 2

LOCATION: 2.4 NM NNE OF PHUC YEN AIRFIELD AND 1 NM SW OF PHUC YEN
PETROLEUM PRODUCTS STORAGE NNE UNDERGROUND

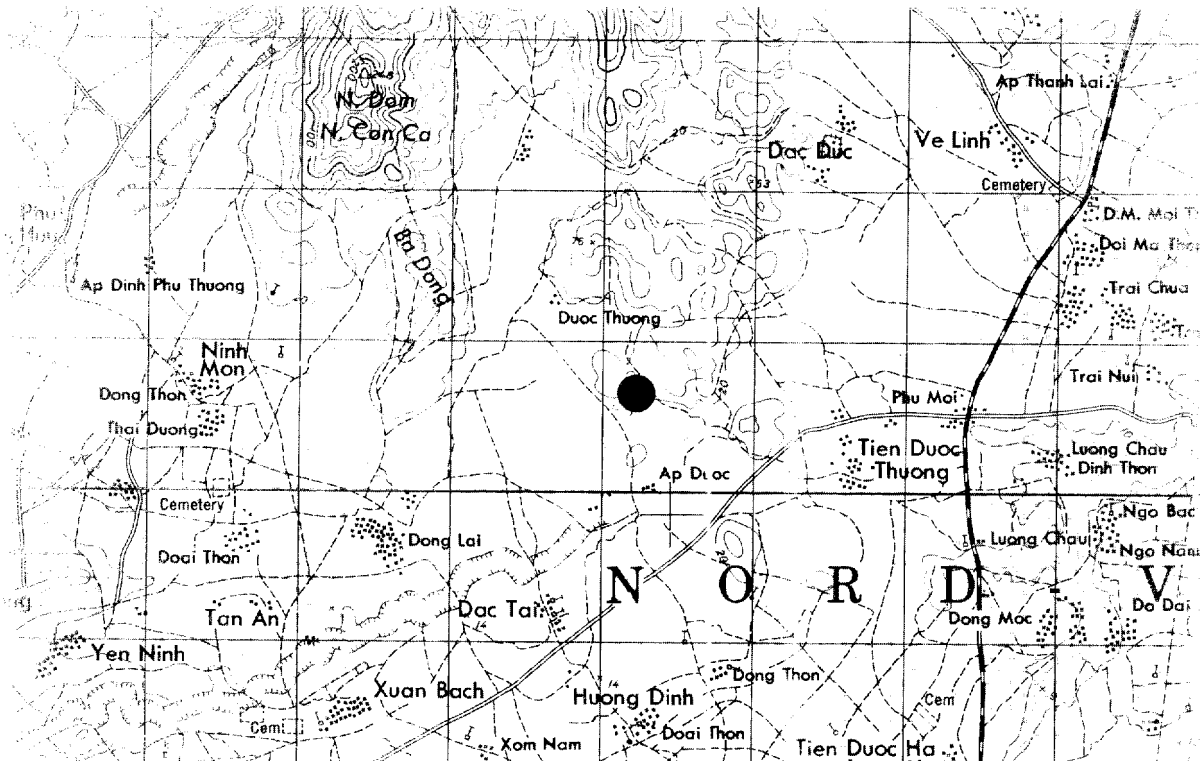
DESCRIPTION: AREA CONTAINS 4 BUNKERS, EACH WITH 5 TANKS.

ESTIMATED CAPACITY: TANK 240 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6174-I, 3D ED, DEC 59 (U)
AMS SERIES JOG(G) 1501, SHEET 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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3/08X04/DEIN-RIZAL

25X1

25X1C

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25X1C

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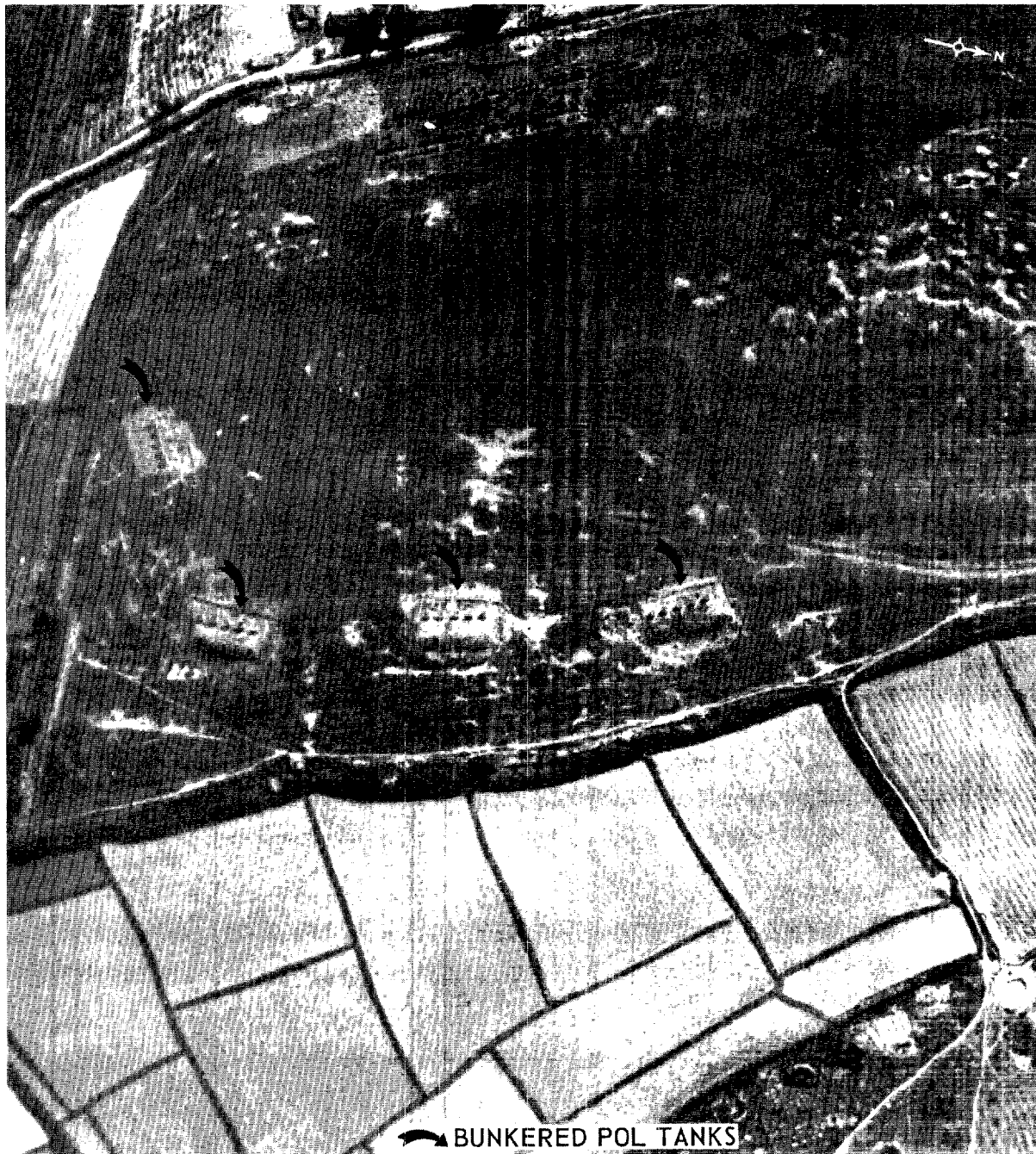
PHUC YEN AIRFIELD POL STORAGE AREA 2

WJ862506

2115N 10549E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1

25X1 25X1C

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25X1A

[REDACTED]

WE919764

1752N 10552E

BE NUMBER

UTM COORDINATES

GEOGRAPHIC COORDINATES

NAME: XOM DUONG QUAN PETROLEUM PRODUCTS STORAGE JG EAST

LOCATION: 1.2 NM EAST OF XOM MA LAU ON BOTH SIDES OF ROUTE 101

DESCRIPTION: AREA CONTAINS 5 EMPTY EXCAVATIONS WITH AN ESTIMATED POTENTIAL CAPACITY OF 72 MT.

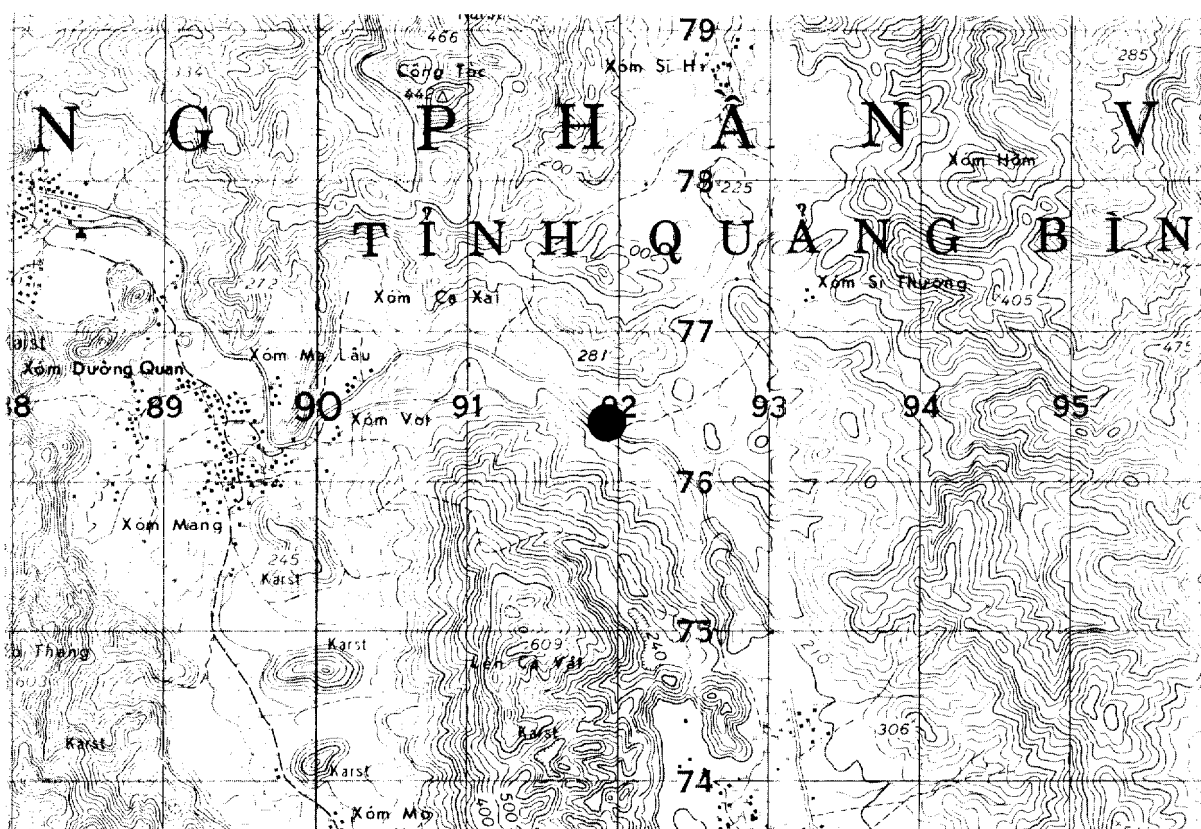
ESTIMATED CAPACITY: NONE

MAP REFERENCES: AMS SERIES L701, SHEET 6164 I, 1ST ED, OCT 63 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-11, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

[REDACTED]

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25X1

[REDACTED]

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25X1 25X1C

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WE919764
UTM COORDINATES

XOM DUONG QUAN PETROLEUM PRODUCTS STORAGE UG EAST
1752N 10552E
GEOGRAPHIC COORDINATES



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25X1C

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25X1

25X1A

WE895768
UTM COORDINATES

1752N 10550E
GEOGRAPHIC COORDINATES

LOCATION: NORTH AND SOUTH OF XOM MA LAU ON BOTH SIDES OF ROUTE 101

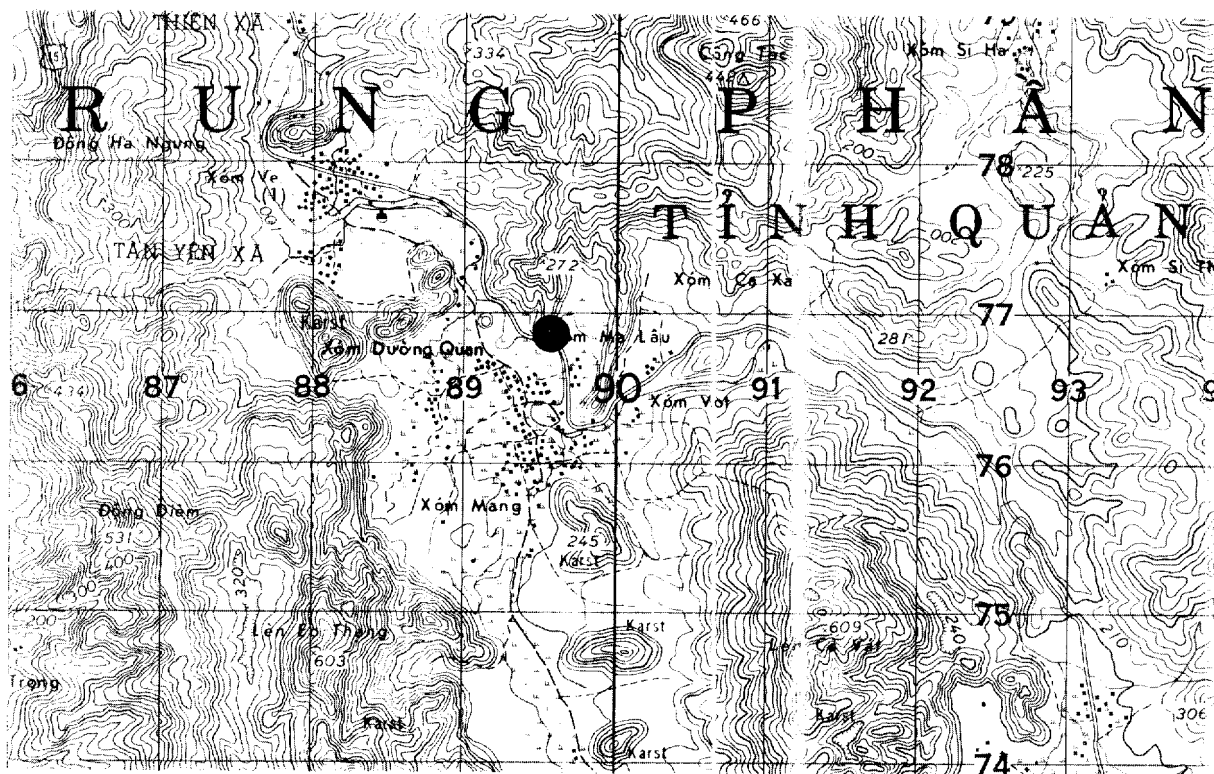
DESCRIPTION: AREA CONSISTS OF 6 EMPTY EXCAVATIONS AND 6 BURIED POL TANKS IN A WOODED AREA. WHEN THE EMPTY EXCAVATIONS ARE FILLED, THE ESTIMATED CAPACITY WILL BE INCREASED TO 144 MT. FOUR CAMOUFLAGED VEHICLES ARE OBSERVED IN THE AREA.

ESTIMATED CAPACITY: TANK 72 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6164 I, 1ST ED, OCT 63 (U)
AMS SERIES JOG(G) 1501, SHEET NE 48-11, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

25X1D



25X1

25X1C

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XOM DUONG QUAN PETROLEUM PRODUCTS STORAGE UG
WE895768 1752N 10550E
UTM COORDINATES GEOGRAPHIC COORDINATES



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25X1

CATEGORY C.
DRUM STORAGE AREAS

25X1

25X1C

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TABLE OF CONTENTS CATEGORY C

BE No.

Installation Name
Ky Tran POL Storage Area

Page Nos.
C1, C2

25X1C

25X1

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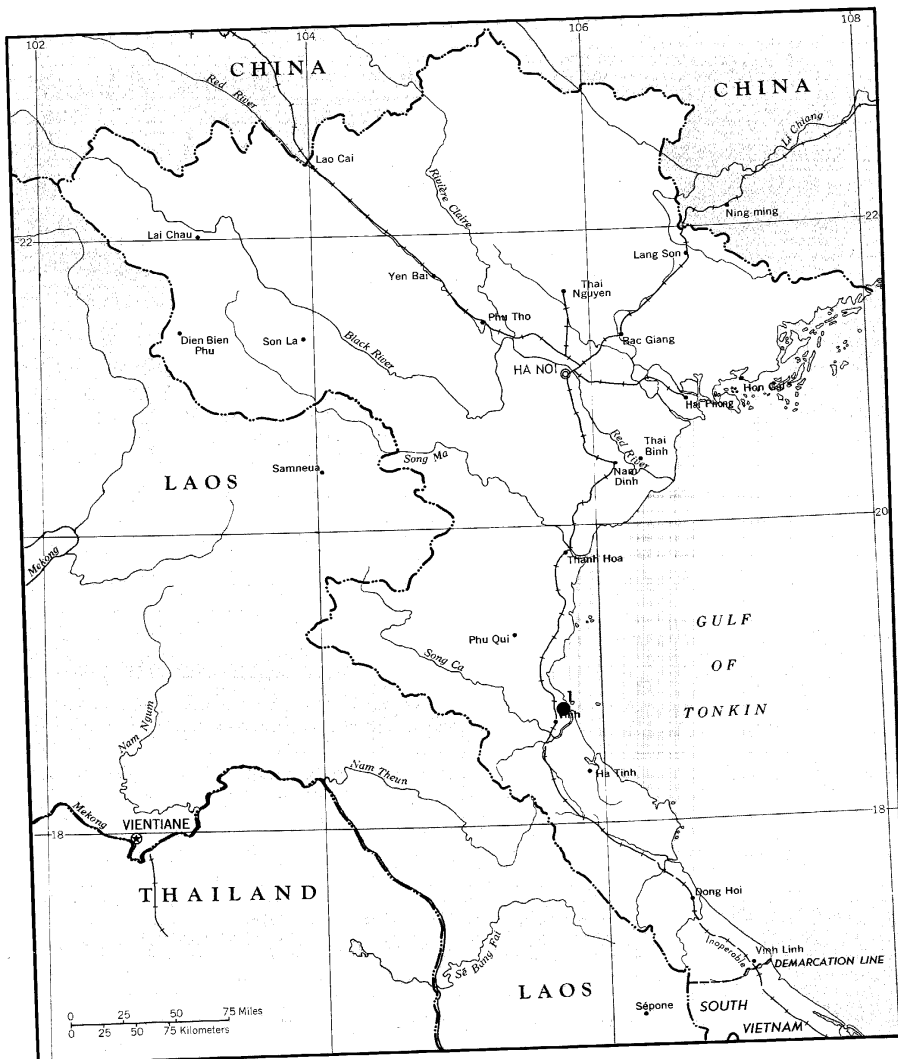
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KEY TO CATEGORY C
DRUM STORAGE AREAS

1. Ky Tran POL Storage Area



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25X1

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25X1

R-218/66

WF705767
UTM COORDINATES

1847N 10540E
GEOGRAPHIC COORDINATES

NAME: KY TRAN POL STORAGE AREA

LOCATION: 0.2 NM SOUTH OF KY TRAN, 6.9 NM NORTH OF VINH, AND 1.2 NM EAST OF ROUTE 1A AND THE THANH HOA/VINH RAIL LINE

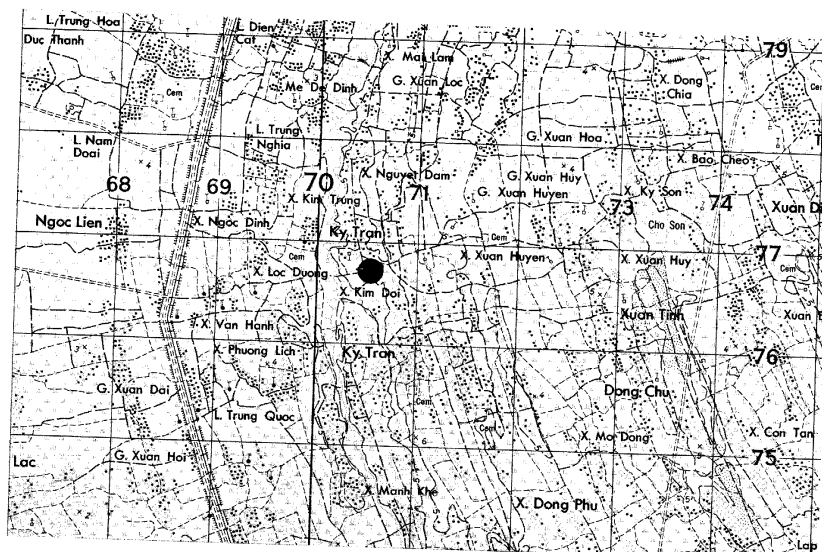
DESCRIPTION: STORAGE AREA CONSISTS OF AT LEAST 24 PARALLEL TRENCHES IN 3 LIGHTLY WOODED AREAS ALONG BOTH SIDES OF A SECONDARY ROAD JUST SOUTH OF KY TRAN. APPROXIMATELY 1,000 POL DRUMS ARE STORED IN THESE TRENCHES. THE PART OF THE AREA SHOWN IN INSET IS AT UTM WF708768.

ESTIMATED CAPACITY: DRUM 200 MT

MAP REFERENCES: AMS SERIES L701, SHEET 6167 III, 1ST ED, DEC 60 (U)
AMS SERIES JOG(G), SHEET NE 48-7, 1ST ED, DEC 65 (U)

PHOTO REFERENCE:

25X1D



C1

25X1C

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25X1

25X1C

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25X1

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KY TRAN POL STORAGE AREA

WF705767
UTM COORDINATES

1847N 10540E
GEOGRAPHIC COORDINATES



C2

25X1C

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25X1

CATEGORY D.
MISCELLANEOUS

D

25X1

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TABLE OF CONTENTS CATEGORY D

<u>BE No.</u>	<u>Installation Name</u>	<u>Page Nos.</u>
	Thuy Phuong POL Storage Tanks	D1, D2
	Ha Noi Probable POL Tank Fabrication Area 1	D3, D4
	Ha Noi Probable POL Tank Fabrication Area 2	D5, D6
	Ninh Binh (POL Tanks in Sampan)	D7, D8

25X1

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R-218/66

0616-
BE NUMBER

WJ809323
UTM COORDINATES

2105N 10546E
GEOGRAPHIC COORDINATES

NAME: THUY PHUONG POL STORAGE TANKS

LOCATION: NE SECTION OF THUY PHUONG AND 5.3 NM NW OF HA NOI

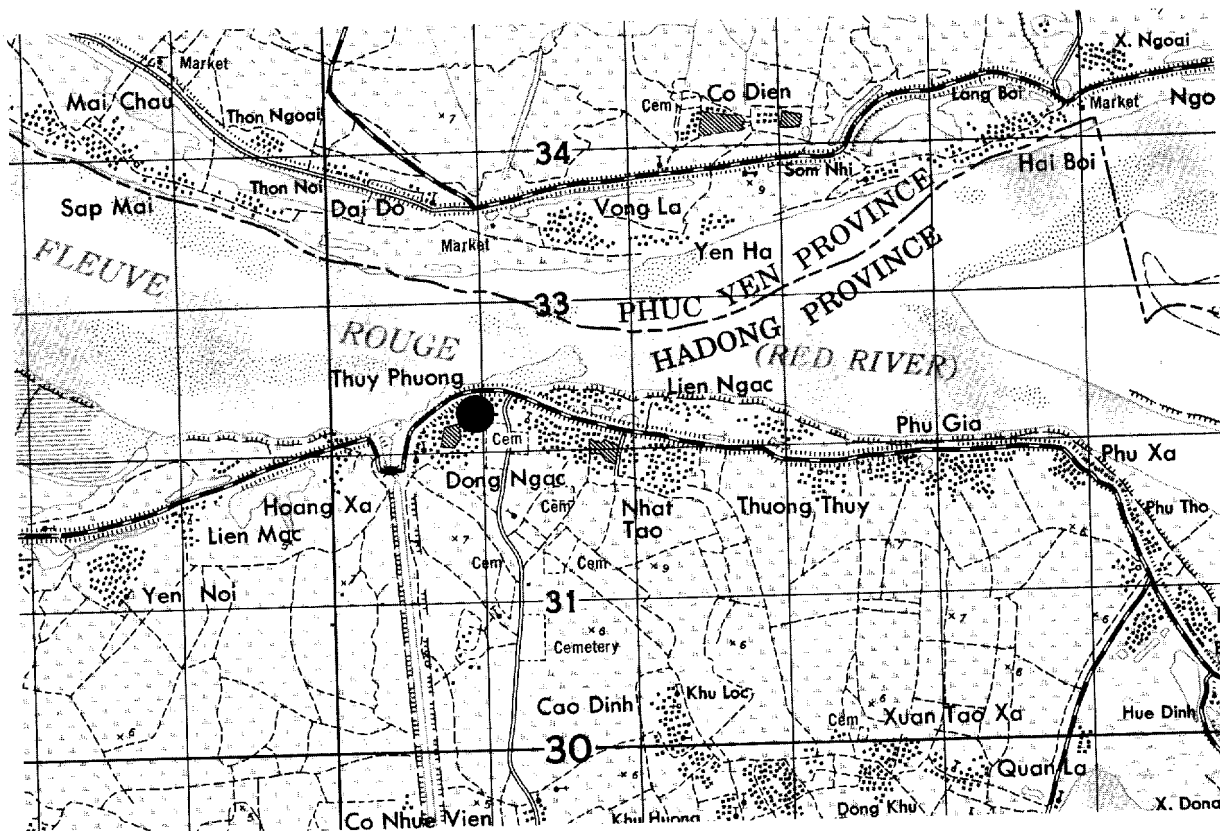
DESCRIPTION: SITE CONTAINS A TOTAL OF 65 (55 STANDARD AND 10 LARGE) TANKS IN RANDOM STORAGE. THIRTY-SIX UNASSEMBLED TANK SECTIONS ARE ALSO OBSERVED. NO PERMANENT POL STORAGE FACILITY IS APPARENT AT THIS SITE.

ESTIMATED CAPACITY: NOT APPLICABLE

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(G) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



D1

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THUY PHUONG POL STORAGE TANKS

WJ809323

2105N 10546E

UTM COORDINATES

GEOGRAPHIC COORDINATES



D2

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R-218/66

0616-
BE NUMBER

WJ857246
UTM COORDINATES

2101N 10549E
GEOGRAPHIC COORDINATES

NAME: HA NOI PROBABLE TANK FABRICATION AREA 1

LOCATION: ON SW EDGE OF HA NOI

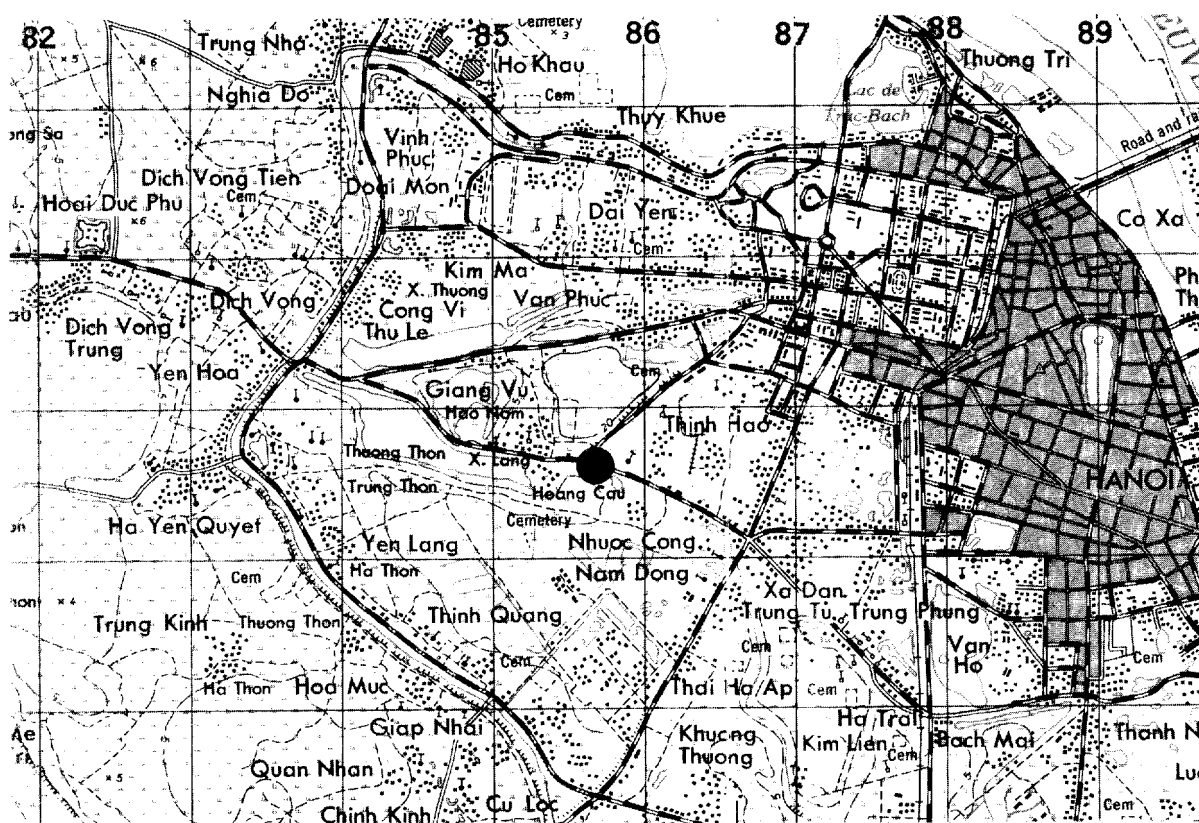
DESCRIPTION: PROBABLE TANK FABRICATION AREA CONSISTS OF 21 APPROXIMATELY
(25-MT-TYPE) TANKS IN AN OPEN FIELD WITH 6 CIRCULAR PROBABLE TANK
FRAMES IN THE SAME AREA.

ESTIMATED CAPACITY: NOT APPLICABLE

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOG(A) 1501, SHEET DE 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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HA NOI PROBABLE TANK FABRICATION AREA 1

WJ857246

2101N 10549E

UTM COORDINATES

GEOGRAPHIC COORDINATES



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25X1 25X1C

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F-218/66

0616-	VJ864254	2101N 10549E
BE NUMBER	UTM COORDINATES	GEOGRAPHIC COORDINATES

NAME: HA NOI PROBABLE POL TANK FABRICATION AREA 2

LOCATION: ON WEST EDGE OF HA NOI, 0.6 NM NE OF HA NOI PROBABLE TANK FABRICATION AREA 1

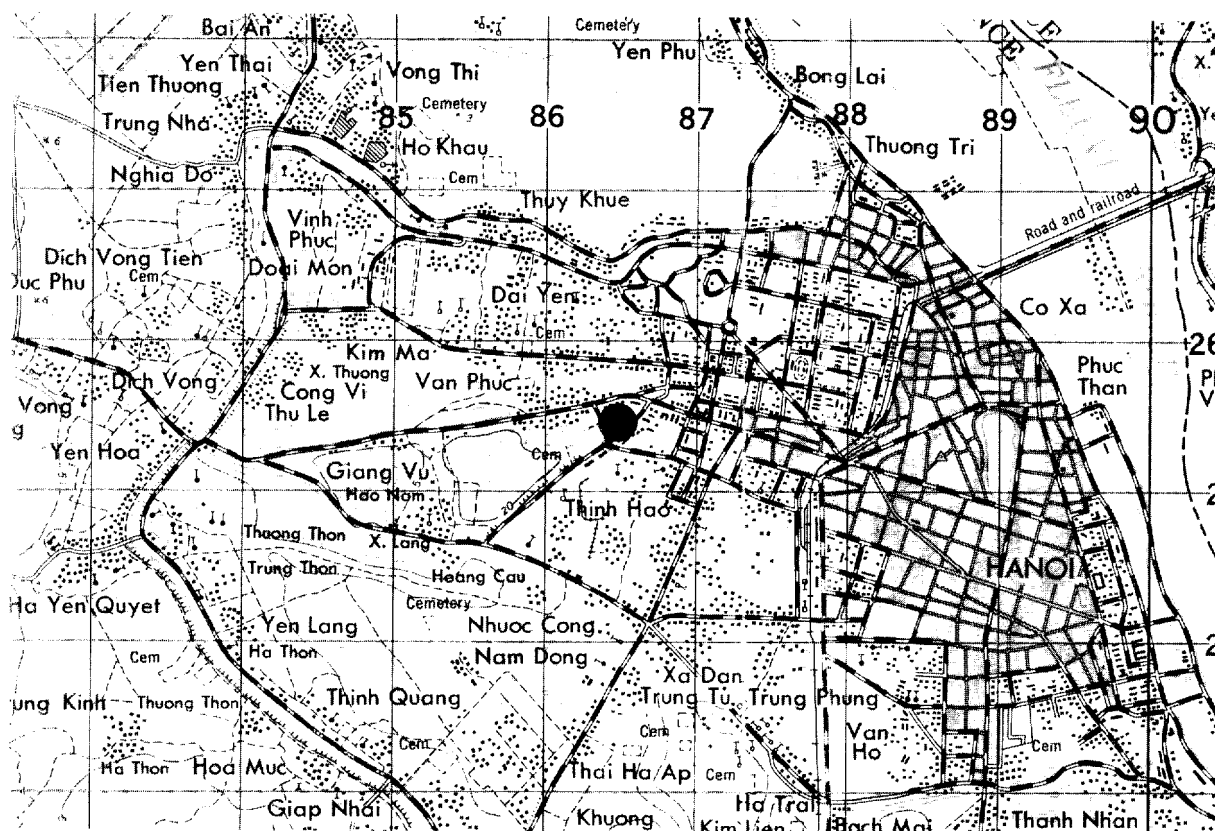
DESCRIPTION: AREA CONTAINS 45 LARGE AND 5 STANDARD TANKS IN OPEN STORAGE. NUMEROUS DRUMS ARE LOCATED ADJACENT TO MAIN TANK AREA AND 13 CARGO TRUCKS (3 WITH POL DRUMS) ARE PARKED ON A ROAD TO THE WEST.

ESTIMATED CAPACITY: NOT APPLICABLE

MAP REFERENCES: AMS SERIES L701, SHEET 6174 II, 3D ED, APR 63 (U)
AMS SERIES JOC(A) 1501, SHEET NF 48-11, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

25X1D



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25X1

R-218/66

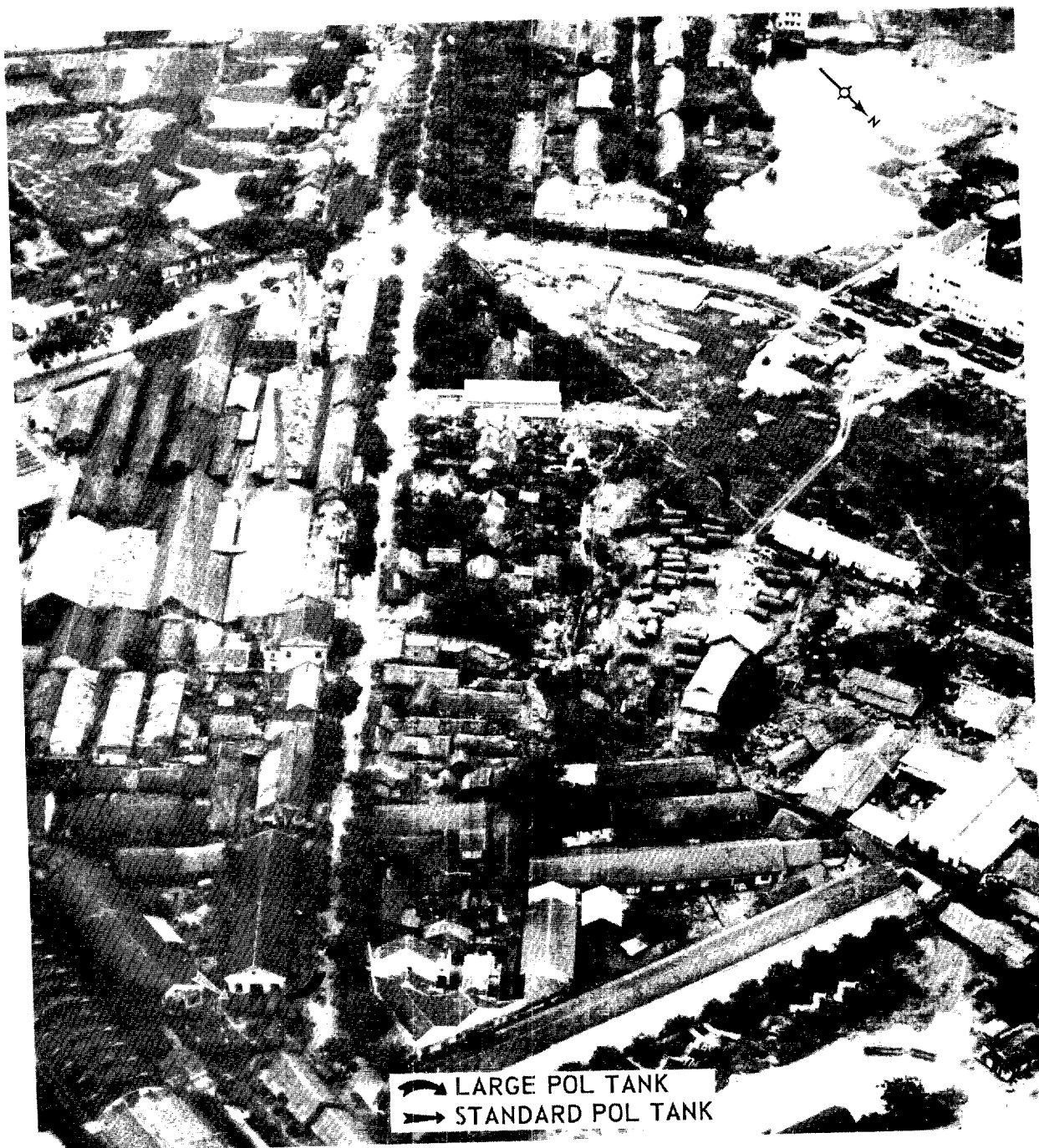
HA NOI PROBABLE POL TANK FABRICATION AREA 2

2101N 10549E

WJ864254

UTM COORDINATES

GEOGRAPHIC COORDINATES



25X1C

D6

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R-218 (b)

0616-
BE NUMBER

XI4024395
UTM COORDINATES

2115N 10559E
GEOGRAPHIC COORDINATES

NAME: NINH BINH (POL TANKS IN SAMPAN)

LOCATION: NE EDGE OF NINH BINH

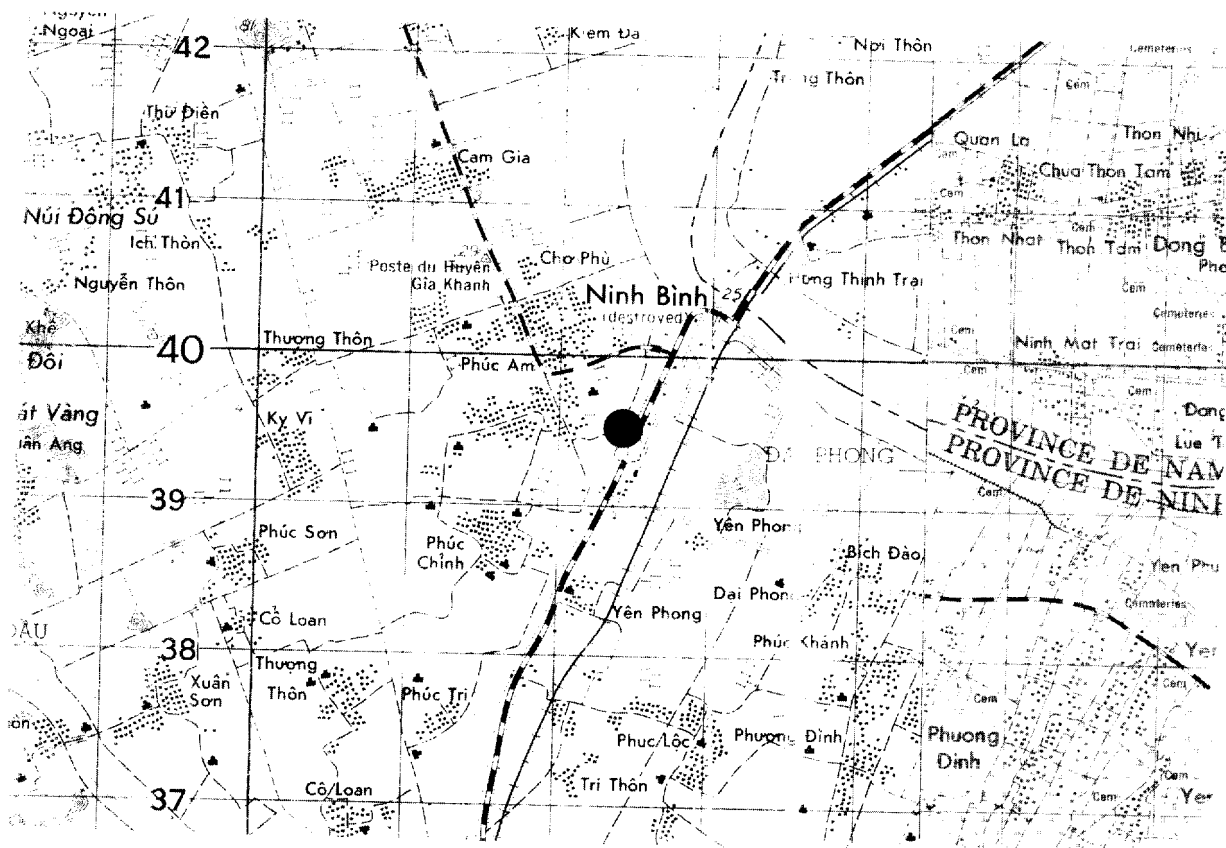
DESCRIPTION: TWO POL TANKS ARE OBSERVED IN A SAMPAN DOCKED IN AN INLET OF THE SONG VAN (RIVER).

ESTIMATED CAPACITY: NOT APPLICABLE

MAP REFERENCES: AMS SERIES L701, SHEET 5171- , 1ST ED, NOV 63 (U)
AMS SERIES JOG(C) 1501, SHEET NF 48-15, 1ST ED, JUN 65 (U)

PHOTO REFERENCE:

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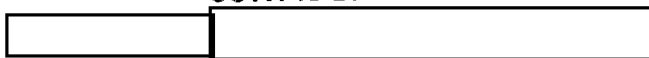
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NINH BINH (POL TANKS IN SAMPAN)

XH024395

2115N 10559E

UTM COORDINATES

GEOGRAPHIC COORDINATES



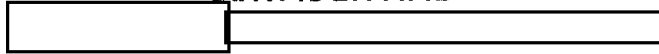
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25X1



ANNEX
I

DIA ANNEX

SECRET

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25X1

25X1C

INTRODUCTION

Annex I, prepared by the DIA Production Center, is divided into Sections XA and XB, corresponding to Categories A and B. These sections contain detailed target analyses of the POL storage and handling facilities. Included in the descriptions is information on the significance and capacities of the facilities, target and defense environments, probable impact upon North Vietnam if destroyed, length of time required for restoration, and results of air strikes.

SECRET

25X1

CATEGORY A.

**PERMANENT STORAGE
AND HANDLING FACILITIES**

**X
A**

SECRET

TABLE OF CONTENTS CATEGORY A

<u>BE No.</u>	<u>Installation Name</u>	<u>Page No.</u>
	Viet Tri Petroleum Products Storage (JCS-51.14)	X-A1
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	Phuc Yen Petroleum Products Storage NNE UG (JCS-51.1)	X-A5
	Ha Noi Petroleum Products Storage Thanh Am (JCS-49)	X-A7
	Nguyen Khe Petroleum Products Storage (JCS-51.0)	X-A9
	Bac Giang Petroleum Products Storage (JCS-51.11)	X-A11
	Nam Dinh Petroleum Products Storage (JCS-51.12)	X-A13
	Hai Phong Petroleum Products Storage (JCS-48)	X-A15
	Duong Nham Petroleum Products Storage UG (JCS-51.17)	X-A17
	Do Son Petroleum Storage (JCS-51.13)	X-A19
	Phu Van POL Storage (JCS-42)	X-A21
	Vinh Petroleum Products Storage (JCS-50)	X-A23
	Phu Qui Petroleum Products Storage (JCS-51.16)	X-A25
	Ha Noi/Gia Lam Airfield POL Storage Area	X-A27

SECRET

25X1

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SECRET

VIET TRI PETROLEUM PRODUCTS STORAGE
JCS-51.14

R-218/66

WJ453547

25X1A

2117N 10526E

UTM COORDINATES

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS FACILITY IS IMMEDIATELY SOUTH OF VIET TRI, ABOUT 28 NM NW OF HA NOI. IT CONSISTS OF 3 MEDIUM CYLINDRICAL TANKS, 4 HORIZONTAL SERVICE TANKS, AND 2 UNDERGROUND CYLINDRICAL TANKS 50 FEET IN DIAMETER. ONE LARGE ABOVEGROUND CYLINDRICAL TANK WAS REMOVED PRIOR TO STRIKE. THREE SUPPORT BUILDINGS ARE PRESENT, OF WHICH 1 SERVES AS A DRUM STORAGE WAREHOUSE. THE FACILITY IS SERVED BY ROAD AND RAIL AND MAY HAVE A SMALL BARGE LANDING NEARBY. WITH A CAPACITY OF 1,670 MT EXCLUSIVE OF UG TANKS, THE DEPOT IS A KEY TRANSHIPMENT POINT FOR POL SUPPLY MOVEMENTS TO THE NW REGIONS.

ELEVEN SAM SITES HAVE BEEN CONFIRMED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF VIET TRI, AND 9 SITES ARE WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE AREA INCLUDES 17 ACTIVE SITES (22 OCCUPIED 37MM AND 102 OCCUPIED 57MM/85MM REVETMENTS) AND 5 INACTIVE AAA SITES. ALTHOUGH NO MILITARY UNITS ARE KNOWN TO BE IN THE IMMEDIATE VICINITY OF VIET TRI, MACHINEGUN/SMALL ARMS FIRE FROM LOCAL SECURITY AND MILITIA ELEMENTS WOULD BE ANTICIPATED.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY AND STOCKS ON HAND WOULD DISRUPT THE FLOW OF POL TO THE NW REGIONS AND REMOVE A SIGNIFICANT TRANSHIPMENT POINT BETWEEN THESE AREAS AND THE SOURCE OF SUPPLY AT HA NOI.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF AT LEAST SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

THE TARGET AREA WAS STRUCK 3 TIMES ON 30 JUNE 1966 BY 12 USAF F105 AIRCRAFT, SUPPORTED BY 38 USAF AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 36/750#GP BOMBS AND 12 CBU-24. NO DAMAGE WAS APPARENT TO THE 9 STORAGE TANKS. ABOUT 8 CRATERS ARE ADJACENT TO THE TARGET ON THE SE.

PREPARED BY DIA PRODUCTION CENTER

X-A1

25X1C

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SECRET

25X1

25X1 25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

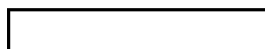


R-218/66

PHUC YEN AIRFIELD POL STORAGE AREA

WJ836482
UTM COORDINATES

25X1A



2114N 10548E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 0.8 NM NORTH OF PHUC YEN AIRFIELD. IT CONTAINS 3 LARGE, CYLINDRICAL, UNDERGROUND TANKS; 3 BUNKERED PROBABLE TANKS; AND 7 SUPPORT BUILDINGS. ESTIMATED CAPACITY OF THE SITE IS 4,200 MT. THE AREA IS CONNECTED TO PHUC YEN AIRFIELD BY AN ALL-WEATHER ROAD.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SIXTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 27 ADDITIONAL SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE PHUC YEN AREA INCLUDES 15 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 100MM REVETMENTS, 47 OCCUPIED 57MM/85MM REVETMENTS, AND 25 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 12 INACTIVE SITES IN THE AREA. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-A3

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9



25X1

25X1

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

PHUC YEN PETROLEUM PRODUCTS STORAGE NNE UNDERGROUND
JCS-51.1

R-218/66

WJ868519
UTM COORDINATES

25X1A

2116N 10550E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THE TARGET AREA IS ABOUT 16 NM NORTH OF HA NOI. IT CONTAINS 9 UNDERGROUND POL TANKS AND 8 BUNKERED, SMALL HORIZONTAL TANKS DISPERSED IN HILLY TERRAIN. BARRACKS FACILITIES ARE JUST NW OF THE TANK AREA, AND APPROXIMATELY 30 SUP-PORT BUILDINGS AND FACILITIES FOR LOADING RAILROAD TANK CARS AND TANK TRUCKS ARE JUST SOUTH OF THE TANK AREA. THE DEPOT IS SERVED BY ROAD AND RAIL.

THE FACILITY IS ONE OF THE LARGEST POL STORAGE DEPOTS IN NORTH VIETNAM. THE ESTIMATED CAPACITY IS AT LEAST 11,800 MT. THE TARGET IS BELIEVED TO PROVIDE BACKUP TO THE ON-SITE STORAGE FACILITIES AT PHUC YEN AIRFIELD AND MAY ALSO SERVE OTHER MILITARY FORCES IN THE NORTHERN REGIONS. BECAUSE JET FIGHTERS HAVE BEEN IDENTIFIED AS OPERATING FROM PHUC YEN AIRFIELD, IT IS CONSIDERED HIGHLY PROBABLE THAT JET FUEL MAY BE AMONG THE PRODUCTS STORED AT THE TARGET DEPOT.

FOURTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 24 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN A 30-NM RADIUS OF THE TARGET. IDENTIFIED AAA ACTIVITY IN THE PHUC YEN AREA INCLUDES 12 ACTIVE SITES CONSISTING OF 62 OCCUPIED 57MM/85MM REVETMENTS (PLUS 1 SITE OF 4 REVETTED ZSU-57-2 EQUIPMENT), AND 22 OCCUPIED 37MM REVETMENTS. ADDITIONALLY, 15 INACTIVE AAA SITES ARE IN THE AREA. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST LOW-LEVEL AIRCRAFT IN THE AREA.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF TANK CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY WOULD DENY SIGNIFICANT STOCKS OF POL TO ALL FORCES CURRENTLY SUPPORTED AND PROBABLY REDUCE THE RESERVE STOCKS AVAILABLE TO PHUC YEN AIRFIELD, THEREBY EXTENDING THE LINE OF RESUPPLY ALL THE WAY TO STORAGE FACILITIES AT HA NOI.

RESTORATION OF THIS TARGET TO FULL, PRE-ATTACK CAPABILITY WOULD REQUIRE MANY MONTHS AND HEAVY OUTSIDE ASSISTANCE, PROBABLY FROM CHINA. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. BECAUSE OF THE SIGNIFICANCE OF THE FACILITY, IT IS EXPECTED THAT A HIGH PRIORITY WOULD BE ASSIGNED TO THE REPAIR ACTIVITIES.

PREPARED BY DIA PRODUCTION CENTER

X-A5

25X1C

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SECRET

25X1

~~SECRET~~

25X125X1C

INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS, EVEN UNDER EMERGENCY CONDITIONS.

BOMB DAMAGE ASSESSMENT

THE TARGET WAS STRUCK ON 29 JUNE 1966 BY 24 USAF AIRCRAFT, SUPPORTED BY 47 OTHER AIRCRAFT. ORDNANCE EXPENDED WAS 188/150#GP BOMBS.

OF THE 42 OIL STORAGE TANKS, 32 WERE DESTROYED, AND 10 DAMAGED (3 SEVERE, 3 MODERATE, 4 SUPERFICIAL). APPROXIMATELY 95 PERCENT OF THE ORIGINAL OIL STORAGE CAPACITY WAS DESTROYED/DISMANTLED. THE SUPPORT AREA SE OF THE TARGET HAS 12 BUILDINGS DESTROYED AND 18 DAMAGED (3 SEVERE, 5 MODERATE, 10 SUPERFICIAL). ABOUT 48 PERCENT OF THE SUPPORT FLOOR PLAN AREA WAS DESTROYED. THE SUPPLY AREA LOCATED SOUTH OF THE TARGET HAS APPROXIMATELY 20 DAMAGED BUILDINGS. OUTSIDE THE TARGETED COMPLEX, ABOUT 1,500 FEET DUE WEST OF THE TARGET, 8 BUILDINGS WERE DAMAGED.

25X1C

X-A8

25X1

~~SECRET~~

25X1C

R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE THANH AM
JCS-49

25X1A

WJ932294
UTM COORDINATES

2103N 10553E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THE TARGET AREA IS 3.7 NM NE OF HA NOI. IT CONTAINS 32 REVETTED VERTICAL TANKS RANGING FROM [] IN DIAMETER, 8 BULLET TANKS OF UNKNOWN SIZE, 2 SMALL HORIZONTAL SERVICE TANKS, 2 RAIL TRANSFER POINTS, AND A PROBABLE TRUCK LOADING AREA. THE SUPPORT AREA INCLUDES ABOUT 30 BUILDINGS OF VARIOUS SIZES. IT IS WALLED AND FENCED, AND IS SERVED BY RAIL AND ROAD.

THIS FACILITY HAS A STORAGE CAPACITY OF 36,453 MT. THE SECOND LARGEST POL STORAGE DEPOT IN THE COUNTRY, IT IS BELIEVED TO BE THE PRINCIPAL DISTRIBUTION POINT FOR MOST OF THE COUNTRY. THE TARGET ALSO SERVES AS THE RECEIVING FACILITY FOR POL IMPORTS ENTERING THE COUNTRY BY WAY OF RAIL ACROSS COMMUNIST CHINA.

THERE ARE 15 IDENTIFIED SAM SITES WITHIN SA-2 MISSILE RANGE (17.5 NM) OF A REFERENCE POINT AT 21-01N 105-51E. ADDITIONALLY, 27 SITES ARE 18 - 30 NM FROM THE REFERENCE POINT. IDENTIFIED AAA ACTIVITY IN THE HA NOI AREA INCLUDES 46 ACTIVE SITES CONTAINING 236 OCCUPIED 57MM/85MM REVETMENTS (WHICH MAY INCLUDE LIMITED NUMBERS OF 88MM AND/OR 100MM WEAPONS) AND 55 OCCUPIED 37MM REVETMENTS. OF THE THIRTY-FOUR 57MM/85MM SITES, 19 ARE CONSIDERED TO BE EQUIPPED WITH FIRE CONTROL RADAR. IN ADDITION, 56 INACTIVE AAA SITES ARE IN THE AREA. AN UNDETERMINED AMOUNT OF INTENSE SMALL ARMS AND HMG FIRE (PRIMARILY 7.62MM, 12.7MM, AND 14.5MM) IS ANTICIPATED AGAINST LOW-LEVEL AIRCRAFT.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY.

LOSS OF THE STORAGE CAPABILITY AND STOCKS ON HAND AT THIS FACILITY SIGNIFICANTLY REDUCE THE SUPPLY OF POL THROUGHOUT THE COUNTRY, AND DISRUPT BOTH THE FLOW OF RAIL SHIPMENTS INTO THE COUNTRY AND THE DISTRIBUTION THROUGHOUT A VERY LARGE AREA. SHIPMENTS SOUTHWARD, INCLUDING THOSE BELIEVED GOING TO THE VIET CONG AND PATHET LAO, WOULD BE SEVERELY REDUCED.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE 3 - 6 MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPINGS, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE

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X-A7

~~SECRET~~

NGUYEN KHE PETROLEUM PRODUCTS STORAGE
JCS-51.0

P-218/66

WJ892408

25X1A

2110N 10551E

UTM COORDINATES

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS TARGET AREA (CONSISTING OF AREAS A, B, AND C) IS 0.4 NM SE OF NGUYEN KHE AND 8.3 NM NORTH OF HA NOI. IT CONTAINS 13 VERTICAL TANKS, OF WHICH 9 ARE PARTLY UNDERGROUND AND EARTH MOUNDED AND 4 ARE ABOVEGROUND; 3 HORIZONTAL SERVICE TANKS; A RAIL TANKER LOADING FACILITY; AND SEVERAL STORAGE AND BARRACKS-TYPE BUILDINGS. SIXTEEN UNDERGROUND PROTECTIVE STORAGE BUNKERS WERE REMOVED PRIOR TO STRIKE. THE DEPOT HAS A STORAGE CAPACITY OF 8,925 MT AND IS ONE OF THE LARGER POL STORAGE FACILITIES IN THE COUNTRY. IT IS BELIEVED TO SERVE THE MILITARY FORCES IN THE NORTHERN PROVINCES.

FIFTEEN IDENTIFIED SAM SITES ARE WITHIN SA-2 MISSILE RANGE (17.5 NM) OF A REFERENCE POINT IN HA NOI AT 21-01N 105-51E. IN ADDITION, THERE ARE 27 SITES WITHIN AN 18 - 30 NM RADIUS OF THE REFERENCE POINT. IDENTIFIED AAA ACTIVITY IN THE HA NOI AREA INCLUDES 46 ACTIVE SITES CONTAINING 236 OCCUPIED 57MM/85MM REVETMENTS (WHICH MAY INCLUDE LIMITED NUMBERS OF 88MM AND/OR 100MM WEAPONS) AND 55 OCCUPIED 37MM REVETMENTS. OF THE THIRTY-FOUR 57MM/85MM SITES, 19 ARE CONSIDERED TO BE EQUIPPED WITH FIRE CONTROL RADAR. IN ADDITION, 56 INACTIVE AAA SITES ARE IN THE AREA. AN UNDETERMINED AMOUNT OF INTENSE SMALL ARMS AND HMG FIRE (PRIMARILY 7.62MM, 12.7MM, AND 14.5MM) IS ANTICIPATED AGAINST LOW-LEVEL AIRCRAFT.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF STORAGE CAPABILITY AND STOCKS ON HAND AT THIS FACILITY WOULD INDUCE SHORTAGES OF FUELS IN THE NORTHERN PROVINCES, NECESSITATING REROUTING OF MATERIALS NEEDED ELSEWHERE. ADDITIONAL BURDENS WOULD BE PLACED ON OTHER FACILITIES IN THE HA NOI AREA.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS, EVEN UNDER EMERGENCY CONDITIONS.

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SECRET

25X1 25X1C

BOMB DAMAGE ASSESSMENT

THE TARGET AREA WAS STRUCK 3 TIMES ON 30 JUNE 1966 BY 12 USAF AIRCRAFT, SUPPORTED BY 38 USAF AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 62/750#GP BOMBS AND 16/CBU 24.

ONE STORAGE TANK IN AREA A (19 PERCENT OF THE CAPACITY) WAS DESTROYED. SMOKE FROM FIRES, APPARENTLY FROM POL VEHICLE OR DRUM STORAGE IN THE AREA JUST WEST OF THE TARGET, COVERED ALL OF AREA B. THE HORIZONTAL STORAGE TANKS IN AREA C APPEAR TO HAVE BEEN REMOVED PRIOR TO STRIKE. TWO CRATERS WERE VISIBLE IN THE NORTH END OF AREA C. SIXTEEN BUILDINGS IN THE SUPPORT AREA WERE SUPERFICIALLY DAMAGED. THE RAIL TANKER TRANSFER POINT APPEARS TO BE IN THE PROCESS OF BEING DISMANTLED. THE RAIL LINE WAS NOT DAMAGED. SMOKE PRECLUDED AN ACCURATE ASSESSMENT OF DAMAGE IN AREA B.

X-A10

SECRET

25X1C

25X1

25X1

25X1C

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SECRET

R-218/66

BAC GIANG PETROLEUM PRODUCTS STORAGE
JCS-51.11XJ243518
UTM COORDINATES

25X1A

2116N 10611E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THE TARGET IS ON THE SOUTH EDGE OF BAC GIANG, ABOUT 25 NM NE OF HA NOI. THIS FENCED FACILITY CONTAINS 4 VERTICAL CYLINDRICAL TANKS ABOVEGROUND, OF WHICH 1 IS 40 FEET IN DIAMETER AND 3 ARE [REDACTED] IN DIAMETER; 2 CYLINDRICAL UNDERGROUND TANKS; AND 4 SERVICE TANKS 10 - 15 FEET IN DIAMETER. FOUR LARGE VERTICAL CYLINDRICAL TANKS HAD BEEN DISMANTLED PRIOR TO STRIKE. IT ALSO HAS 5 SUPPORT BUILDINGS AND IS SERVED BY ROAD, A RAIL SPUR, AND A SMALL PIER. CAPACITY IS ABOUT 2,330 MT EXCLUSIVE OF UG TANKS. IT IS A KEY POINT IN THE DISTRIBUTION OF POL TO THE NE PROVINCES. IT SERVES AS A TRANSSHIPMENT POINT FOR PRODUCTS MOVING NORTHWARD, AS WELL AS A DISTRIBUTION CENTER FOR CONSUMERS IN THE BAC GIANG AREA.

25X1

FOURTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THIS TARGET; 22 ADDITIONAL SITES ARE WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE BAC GIANG AREA INCLUDES 10 ACTIVE SITES COMPRISING 37 OCCUPIED 57MM/85MM REVETMENTS AND 19 OCCUPIED 37MM REVETMENTS. SEVEN INACTIVE AAA SITES ARE ALSO IN THE AREA.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY AND THE STOCKS ON HAND WILL DISRUPT THE FLOW OF POL TO THE NE AREAS AND DENY SUPPLIES TO CONSUMERS IN THE BAC GIANG AREA. RELIANCE ON DIRECT SUPPLY FROM HA NOI WOULD BE INDUCED.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF AT LEAST SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT IS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

THE TARGET WAS STRUCK ON 30 JUNE 1966 BY 18 USN AIRCRAFT, SUPPORTED BY 6 OTHER AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 48/MK 82, 4/LAU 3A (2.75"), AND 4/AERO 7D (2.75").

PREPARED BY DIA PRODUCTION CENTER

X-A11

25X1

25X1C

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SECRET

25X1

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

ONE LARGE AND 1 MEDIUM CYLINDRICAL ABOVEGROUND TANKS WERE DAMAGED; 2 MEDIUM CYLINDRICAL ABOVEGROUND TANKS AND 1 SERVICE TANK WERE DESTROYED; AND THE 3 REMAINING SERVICE TANKS WERE PROBABLY DAMAGED. THERE WAS NO APPARENT DAMAGE TO THE UNDERGROUND TANKS. TWO SUPPORT BUILDINGS WERE DESTROYED AND 3 SUPERFICIALLY DAMAGED.

25X1C

X-A12

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

~~SECRET~~

25X1C

R-218/66

NAM DINH PETROLEUM PRODUCTS STORAGE

JCS-51.12

25X1A

XH228576
UTM COORDINATES

2024N 10610E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS FENCED FACILITY IS LOCATED ON THE SOUTH EDGE OF NAM DINH. IT CONTAINS 7 CYLINDRICAL TANKS RANGING FROM [REDACTED] IN DIAMETER AND 4 HORIZONTAL TANKS ABOUT [REDACTED] IN DIAMETER. SUPPORT FACILITIES INCLUDE 1 LARGE WAREHOUSE AND 6 SMALLER BUILDINGS. THE TARGET IS SERVED BY ROAD, RAIL, AND PROBABLY BY RIVER BARGE.

THE FACILITY HAS AN ESTIMATED STORAGE CAPACITY OF 13,120 MT AND IS A KEY FACILITY IN THE POL DISTRIBUTION SYSTEM SERVING THE SOUTHERN PROVINCES. POL SUPPLIES FOR THE VIET CONG AND PATHET LAO FORCES POSSIBLY MOVE THROUGH THIS DEPOT.

IN THE AREA ARE 5 ACTIVE AAA SITES (36 OCCUPIED/4 UNOCCUPIED 57MM/85MM POSITIONS), PLUS 7 INACTIVE SITES (36 UNOCCUPIED 57MM/85MM POSITIONS AND 12 UNOCCUPIED 14.5MM - 37MM POSITIONS). ONE OCCUPIED 6-GUN SITE IS IMMEDIATELY WEST OF THE TARGET. THERE ARE 4 CONFIRMED FIRE CONTROL RADAR SITES IN NAM DINH.

STATIONED IN NAM DINH IS THE HEADQUARTERS MILITARY REGION RIGHT BANK, AND REPORTEDLY THE 485TH COASTAL SECURITY BATTALION IS ALSO THERE. NUMEROUS AW/SMALL ARMS POSITIONS SHOULD BE EXPECTED IN THE SURROUNDING VICINITY. EARLY WARNING RADAR IS IN THE AREA, WHICH IS WELL WITHIN THE HA NOI GCI CAPABILITY.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY.

LOSS OF THIS FACILITY AND STOCKS ON HAND WOULD DISRUPT THE FLOW OF POL TO THE VIET CONG, PATHET LAO, AND OTHER CONSUMERS IN THE SOUTHERN PROVINCES, AND REMOVE SIGNIFICANT TRANSSHIPMENT FACILITIES CONNECTING THESE PROVINCES WITH THE SOURCES OF SUPPLY IN HA NOI AND HAI PHONG.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF AT LEAST SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SO-VIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT

PREPARED BY DIA PRODUCTION CENTER

X-A13

~~SECRET~~

25X1 25X1C

APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

THE TARGET AREA WAS STRUCK ON 12 AND 15 SEPTEMBER 1965 BY 6 USN AIRCRAFT, WHICH EXPENDED A TOTAL OF 36/MK 81 SNAKEYE. THESE WERE THE THIRD AND FOURTH STRIKES AGAINST THIS TARGET.

THESE 2 STRIKES DESTROYED ABOUT 36 PERCENT OF THE LARGE SUPPORTING WAREHOUSE, DESTROYED ANOTHER SUPPORT BUILDING, DAMAGED 4 OTHER BUILDINGS, AND SEVERELY DAMAGED 1 CYLINDRICAL TANK.

THE CUMULATIVE RESULT OF AIR STRIKES IS 100 PERCENT DESTRUCTION OF THE POL STORAGE CAPACITY OF THIS INSTALLATION. FOUR HORIZONTAL TANKS WERE DESTROYED; ONE 65-FOOT CYLINDRICAL TANK WAS DESTROYED AND 2 WERE SEVERELY DAMAGED; AND 2 SMALLER CYLINDRICAL TANKS WERE DESTROYED AND 2 WERE SEVERELY DAMAGED. ONE SUPPORT BUILDING WAS DESTROYED AND 4 WERE DAMAGED, AND ABOUT 36 PERCENT OF THE LARGE SUPPORT WAREHOUSE WAS DESTROYED. THE RAIL SPUR SERVING THE FACILITY IS CRATERED AND 1 TANK CAR AND THE LOADING RACKS WERE SEVERELY DAMAGED.

CONSTRUCTION OF 2 BUILDINGS, REPAIR OF A PREVIOUSLY DAMAGED BUILDING, AND THE PRESENCE OF VEHICLES INDICATE THAT THE INSTALLATION IS ACTIVE.

25X1C

25X1

25X1C

R-218/66

HAI PHONG PETROLEUM PRODUCTS STORAGE

JCS-48

25X1A

XJ730087
UTM COORDINATES

2052N 10639E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS FENCED FACILITY IS ABOUT 2 NM WNW OF HAI PHONG. IT CONTAINS 30 ABOVEGROUND, CYLINDRICAL, STEEL STORAGE TANKS RANGING FROM 13 TO 115 FEET IN DIAMETER, AND 5 HORIZONTAL TANKS ABOUT [REDACTED] IN DIAMETER. EXTENSIVE SUPPORT FACILITIES INCLUDE ABOUT 15 - 17 WAREHOUSE-TYPE BUILDINGS RANGING FROM 110' X 70' TO 860' X 150'. NUMEROUS SMALLER SUPPORT BUILDINGS AND OPEN STORAGE AREAS ARE DISPERSED THROUGHOUT THE FACILITY. TRANSPORTATION SERVICES CONSIST OF 3 OIL PIERS, 3 BRANCH RAIL LINES, AND A WELL-DEVELOPED ROAD SYSTEM.

THIS DEPOT, WITH A TOTAL STORAGE CAPACITY OF 47,925 MT, IS OF CRITICAL IMPORTANCE TO THE MILITARY FORCES, INDUSTRIAL BASE, TRANSPORTATION SYSTEMS, AND GENERAL CIVILIAN ECONOMY OF NORTH VIETNAM. REPRESENTING APPROXIMATELY ONE-THIRD OF THE COUNTRY'S POL STORAGE CAPACITY, THIS DEPOT RECEIVES AND DISTRIBUTES ABOUT 90 PERCENT OF THE PETROLEUM PRODUCTS ENTERING THE COUNTRY. THIS IS THE ONLY FACILITY CURRENTLY CAPABLE OF OFF-LOADING LARGE, OCEAN-GOING TANKERS.

THERE ARE 16 IDENTIFIED SAM SITES WITHIN SA-2 MISSILE RANGE (17.5 NM) OF A REFERENCE POINT AT 20-51N 106-41E. ADDITIONALLY, 13 SITES ARE 18 - 30 NM FROM THE REFERENCE POINT. KNOWN AAA ACTIVITY ASSOCIATED WITH THE HAI PHONG AREA INCLUDES 27 ACTIVE SITES COMPRISING 146 OCCUPIED 57MM/85MM REVETMENTS (LIMITED NUMBERS OF 100MM AND/OR 88MM AAA MAY BE INCLUDED IN THIS FIGURE), AND 21 OCCUPIED 37MM REVETMENTS. IN ADDITION, 16 INACTIVE AAA SITES ARE IDENTIFIED IN THE AREA. AN UNDETERMINED AMOUNT OF INTENSE HMG AND SMALL ARMS FIRE (MOSTLY 7.62MM, 12.7MM, AND 14.5MM) IS ANTICIPATED WHERE LOW-LEVEL AIRCRAFT ARE CONCERNED. VIRTUALLY ALL FACTORIES AND OFFICE BUILDINGS MAY HAVE SUCH ANTIAIRCRAFT EMPLACEMENTS ON THE ROOFTOPS.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY AND THE STOCKS ON HAND WOULD INDUCE CRITICAL SHORTAGES OF FUELS THROUGHOUT ALL CONSUMING SECTORS OF THE NORTH VIETNAMESE ECONOMY, THE MILITARY FORCES, AND THE VIET CONG AND PATHET LAO. LOSS OF TANKAGE AND MARINE TERMINAL FACILITIES WOULD FORCE RELIANCE ON THOSE LIMITED STOCKS ON HAND, AND ON THE SEVERELY REDUCED FLOW OF IMPORTS THAT COULD BE BROUGHT IN BY RAIL AND SMALL COASTAL VESSEL.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF SEVERAL MONTHS OR POSSIBLY MUCH LONGER. NORTH VIETNAM IS NOT

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KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS, EVEN UNDER EMERGENCY CONDITIONS.

BOMB DAMAGE ASSESSMENT

THE SECOND STRIKE ON THE TARGET OCCURRED ON 7 JULY 1966 BY 18 USN AIRCRAFT, SUPPORTED BY 26 OTHER USN AIRCRAFT. ORDNANCE EXPENDED WAS 128/-500#GP BOMBS, 16/ZUNI 5" ROCKETS, AND 20MM.

AN ADDITIONAL 25 PERCENT OF THE POL STORAGE CAPACITY WAS DESTROYED. FOUR SUPPORT BUILDINGS AND 1 OF THE 2 PUMPHOUSES WERE DESTROYED. EIGHT OTHER BUILDINGS WERE DAMAGED (2 SEVERE, 6 SUPERFICIAL).

OF THE 35 POL STORAGE TANKS, 17 WERE DESTROYED AND 15 DAMAGED (6 SEVERE, 3 MODERATE, 6 SUPERFICIAL). APPROXIMATELY 81.3 PERCENT OF POL CAPACITY HAS BEEN DESTROYED. FIVE SUPPORT BUILDINGS AND 1 PUMPHOUSE WERE DESTROYED, AND 10 SUPPORT BUILDINGS WERE DAMAGED (4 SEVERE, 6 SUPERFICIAL).

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R-218/66

DUONG NHAM PETROLEUM PRODUCTS STORAGE UNDERGROUND
JCS-51.17

XJ572260

25X1A

2101N 10630E

UTM COORDINATES

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THE TARGET FACILITY, LOCATED 0.2 NM SOUTH OF THE SONG KINH THAY (RIVER) AND ABOUT 14.5 NM NW OF HAI PHONG, IS PROBABLY OCCUPIED. THE POOR QUALITY OF RECENT PHOTOGRAPHY PRECLUDES POSITIVE VERIFICATION. IT IS SERVED BY ROAD, AND PROBABLY IS CAPABLE OF RECEIPT AND/OR DELIVERY AT THE NEAR-BY RIVER. THE FACILITY CONSISTS OF 4 STORAGE TANKS APPROXIMATELY [REDACTED] IN DIAMETER, RECESSED INTO A SMALL HILL BESIDE THE RIVER, AND 3 PROBABLE TANK BASES. SUPPORTING FACILITIES CONSIST OF 13 BUILDINGS, OF WHICH 6 ARE PROBABLY FOR THE STORAGE OF PACKAGED POL STOCKS, AND PROBABLY SOME UNDERGROUND STORAGE IN [REDACTED]

THE FACILITY HAS AN ESTIMATED TOTAL CAPACITY OF 4,920 MT. THE LOCATION OF THIS TARGET AND THE HARDNESS AND CONFIGURATION OF THE SITE INDICATE THAT THIS FACILITY IS IMPORTANT TO ACTIVITIES IN THE AREA AND THAT IT WILL PROBABLY SERVE AS A RESERVE SHOULD THE PRINCIPAL FACILITIES AT HAI PHONG BE DAMAGED.

NINETEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THIS TARGET, AND 22 SITES ARE WITHIN AN 18 - 30 NM RADIUS. NO AAA DEFENSES HAVE BEEN IDENTIFIED IN THE TARGET AREA; THE NEAREST ARE IN THE AREAS OF HAI DUONG (6.7 NM) AND AT HAI PHONG (10 NM). IT IS ANTICIPATED THAT LIGHT MACHINEGUN/SMALL ARMS FIRE FROM LOCAL MILITIA WOULD BE ENCOUNTERED IN THE AREA.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY WOULD DENY THE NORTH VIETNAMESE A STRATEGIC RESERVE BASE WHICH PLAYS A SIGNIFICANT PART IN THEIR ATTEMPT TO ESTABLISH A SECONDARY DISTRIBUTION SYSTEM.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF AT LEAST SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS, EVEN UNDER EMERGENCY CONDITIONS.

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BOMB DAMAGE ASSESSMENT

THE TARGET AREA WAS STRUCK ON 1 JULY 1966. DAMAGE COULD NOT BE ASSESSED BECAUSE THE AREA WAS COMPLETELY OBSCURED BY SMOKE.

THE TARGET WAS STRUCK THE SECOND TIME ON 12 JULY 1966 BY 8 USN AIRCRAFT, SUPPORTED BY 20 OTHER AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 95/250#GP AND 12/500#GP BOMBS.

CUMULATIVE RESULTS OF THESE TWO STRIKES: 1 POL TANK WAS ON FIRE; 2 TANKS WERE OBSCURED BY SMOKE AND COULD NOT BE ASSESSED; 1 TANK APPEARED UN-DAMAGED; 7 STORAGE BUILDINGS, 3 SUPPORT BUILDINGS, AND 2 ADMINISTRATION BUILDINGS WERE DESTROYED. OF THE ORIGINAL CAPACITY OF 4,920 MT, 2,000 MT WERE DESTROYED. THE STATUS OF THE REMAINING CAPACITY COULD NOT BE DETERMINED BECAUSE OF SMOKE OBSCURATION.

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P-218/66

DO SON PETROLEUM STORAGE
JCS-51.13XH871905
UTM COORDINATES

25X1A

2042N 10647E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS TARGET IS ON A PENINSULA NEAR THE TOWN OF DO SON, ABOUT 10.8 NM SE OF HAI PHONG. THE INSTALLATION PREVIOUSLY CONSISTED OF 2 AREAS, AN ORIGINAL AREA NEAR THE SHORE (AREA A) AND A NEW INLAND AREA (AREA B). AREA C CONTAINS 2 PUG CYLINDRICAL STORAGE TANKS 55 FEET IN DIAMETER SURROUNDED BY FIREWALLS. AREA A, WHICH IS ROAD AND POSSIBLY WATER SERVED, INCLUDES AT LEAST 2 SUPPORT BUILDINGS AND 2 PROBABLE SMALL TANKS 10 - 15 FEET IN DIAMETER. AREA B HAS BEEN IDENTIFIED AS A WATER TREATMENT PLANT AND IS NO LONGER A PART OF THE POL STORAGE FACILITY.

THIS FACILITY HAS AN ESTIMATED CAPACITY OF 3,400 MT. IT IS BELIEVED TO SUPPORT HOUSEHOLD AND OTHER CIVILIAN CONSUMERS IN THE PENINSULAR AREA, AS WELL AS ANY NEARBY MILITARY FORCES. THE FACILITY MAY HAVE A VERY LIMITED BARGE OR COASTAL TANKER LOADING CAPABILITY.

FOURTEEN SAM SITES ARE WITHIN SA-2 MISSILE RANGE (17.5 NM) AND 9 OTHER SITES ARE WITHIN AN 18 - 30 NM RADIUS. AAA ACTIVITY IN THE DO SON AREA CONSISTS OF 2 ACTIVE SITES WITH 4 OCCUPIED 37MM AND 8 OCCUPIED 57MM/85MM REVETMENTS, AND 1 INACTIVE SITE. MODERATE MACHINEGUN/SMALL ARMS FIRE CAN BE ANTICIPATED, AS TRENCHES, NUMEROUS AW POSITIONS, AND FOXHOLES ARE EVIDENT IN THE IMMEDIATE VICINITY OF THE TARGET AREA.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF THIS FACILITY WOULD DISRUPT THE FLOW OF POL TO CONSUMERS AND INDUCE RELIANCE ON PACKAGED STOCKS AT REDUCED RATES, OR ON DIRECT SUPPLY FROM HAI PHONG.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE A PERIOD OF SEVERAL MONTHS OR POSSIBLY MUCH LONGER. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER EQUIPMENT BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT IS UNLIKELY THAT EITHER THE SOVIETS OR THE

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COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

THE TARGET WAS FIRST STRUCK ON 29 JUNE 1966. TWO SMALL PROBABLE POL TANKS WERE DESTROYED BUT THE 2 LARGE POL TANKS WERE NOT DAMAGED.

THE SECOND STRIKE ON THE TARGET WAS MADE ON 3 JULY 1966 BY 14 USN AIRCRAFT, SUPPORTED BY 14 OTHER AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 48/500#GP AND 40/250#GP BOMBS, 456/2.75" ROCKETS, AND 24/ZUNI 5" ROCKETS. NO DAMAGE WAS DONE TO POL TANKS, BUT APPARENTLY 22 NEW CRATERS WERE MADE IN THE AREA.

THE 2 SMALL PROBABLE POL TANKS DESTROYED ON 29 JUNE REPRESENT LESS THAN 10 PERCENT OF THE TOTAL PRE-STRIKE CAPACITY OF THE FACILITY. RESTORATION TO ORIGINAL CAPACITY WOULD REQUIRE SEVERAL MONTHS.

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25X1

25X1

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SECRETPHU VAN POL STORAGE
JCS-42

R-218/66

WF345841
UTM COORDINATES

25X1A

1851N 10519E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THE TARGET AREA, LOCATED 2.3 NM ENE OF PHU VAN, CONTAINS ABOUT 14 PARTIALLY UNDERGROUND VENTED BUNKERS DISPERSED IN A RANDOM PATTERN, AND 2 PRINCIPAL SUPPORT BUILDINGS. THE ROAD-SERVED AREA IS CONCEALED BY HEAVY VEGETATION. THE CAPACITY OF THIS POL SITE IS 1,000 MT. THE SITE IS STRATEGICALLY PLACED TO SUPPORT VIET CONG AND PATHET LAO FORCES DRAWING SUPPLIES FROM THE AREA, AS WELL AS REGULAR NORTH VIETNAMESE FORCES BASED ON PHU VAN.

TWO SAM SITES HAVE BEEN IDENTIFIED WITHIN RANGE OF THE TARGET, AND 1 WITHIN AN 20 - 30 NM RADIUS OF THE TARGET. AIRCREWS HAVE REPORTED SIGHTING AIRBORNE MISSILES WITHIN A 10-NM RADIUS OF THE AREA. AAA ACTIVITY IDENTIFIED IN THE PHU VAN/VINH SON VICINITY INCLUDES 10 ACTIVE SITES CONTAINING 26 OCCUPIED 37MM REVETMENTS AND 13 OCCUPIED 57MM/85MM REVETMENTS. MODERATE SMALL ARMS AND HEAVY MACHINEGUN FIRE MAY BE EXPECTED FROM LOCAL SECURITY FORCES AND MILITIA UNITS.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY. LOSS OF STORAGE CAPABILITY AND POL STOCKS WOULD ELIMINATE A REFUELING POINT FOR NORTH VIETNAMESE REGULARS, VIET CONG, AND PATHET LAO FORCES.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE SEVERAL MONTHS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLED LABOR IS EXPECTED TO CONTINUE INDEFINITELY.

BOMB DAMAGE ASSESSMENT

THE TARGET WAS STRUCK ON 6 MAY 1965 BY 10 USAF AIRCRAFT, SUPPORTED BY 29 OTHER USAF AIRCRAFT. ORDNANCE EXPENDED ON THE TARGET CONSISTED OF 79/750#GP BOMBS.

ELEVEN OF THE 14 BUNKERS WERE DESTROYED. THE STATUS OF THE OTHER 3 IS UNCONFIRMED DUE TO THE BLACK SMOKE WHICH OBSCURED THE AREA. OF THE 2 PRINCIPAL SUPPORT BUILDINGS, 1 WAS DESTROYED AND THE OTHER SEVERELY DAMAGED. THE REMAINING CAPACITY AT THIS POL SITE IS UNDETERMINED.

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R-218/66

VINH PETROLEUM PRODUCTS STORAGE
JCS-50

WF762644
UTM COORDINATES

25X1A

1840N 10543E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS TARGET AREA IS 2.8 NM EAST OF VINH AND 5 NM INLAND. PRE-STRIKE STORAGE FACILITIES INCLUDED 3 LARGE, 5 MEDIUM, AND 6 SMALL VERTICAL ABOVEGROUND TANKS; 5 HORIZONTAL SERVICE TANKS; AND 2 UNDERGROUND TANKS.

PRIOR TO [REDACTED] THE TARGET WAS THE THIRD LARGEST POL STORAGE DEPOT IN THE COUNTRY WITH A CAPACITY OF 14,325 MT. THIS DEPOT PLAYED A KEY ROLE IN THE STAGING OF TRANSPORT/SUPPLY OPERATIONS INTO SOUTH VIETNAM OR LAOS. IF OPERATIONAL, THE BERTHING FACILITIES AT THIS DEPOT CAN ACCOMMODATE SMALL OCEAN-GOING OR COASTAL TANKERS IF FACILITIES AT HAI PHONG ARE LOST. THE DEPOT IS STRATEGICALLY LOCATED FOR STAGING OPERATIONS INTO SOUTH VIETNAM OR LAOS.

NO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, BUT 2 SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY INCLUDES 38 ACTIVE SITES CONSISTING OF 67 OCCUPIED 57MM/85MM REVETMENTS AND 112 OCCUPIED 37MM REVETMENTS. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY APPEARS TO BE UNLIKELY IN THE FORESEEABLE FUTURE. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

MAY 1965 AIR STRIKES REDUCED THE TARGET'S STORAGE CAPACITY TO ABOUT 1,400 MT.

EIGHT USN AIRCRAFT STRUCK THE TARGET AGAIN ON 4 APRIL AND 9 JUNE 1966, THE SEVENTH AND EIGHTH TIMES THE TARGET WAS HIT. ORDNANCE EXPENDED CONSISTED

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OF 20/1000#GP BOMBS. WITHIN TARGET AREAS A AND B, ONE SUPPORT BUILDING WAS DESTROYED. OUTSIDE THESE TARGET AREAS, 5 SMALL POL TANKS WERE DESTROYED AND 2 WERE DAMAGED, 4 SUPPORT BUILDINGS WERE DESTROYED AND 5 DAMAGED, AND THE PIER WAS SUPERFICIALLY DAMAGED.

CUMULATIVE DAMAGE INCLUDES 1 LARGE AND 1 MEDIUM ABOVEGROUND VERTICAL TANK DAMAGED AND ALL OTHER ABOVEGROUND VERTICAL TANKS DESTROYED. THE 5 HORIZONTAL TANKS ARE PROBABLY DESTROYED. THE 2 UNDERGROUND TANKS ARE APPARENTLY UNDAAGED.

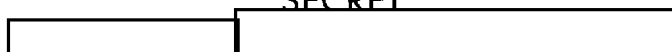
LOSS OF THE REMAINING STORAGE CAPABILITY AT THIS FACILITY WOULD LEAVE THE SOUTHERN PROVINCES WITH NO SIGNIFICANT BULK POL STORAGE, AND FORCE RELIANCE ON PACKAGED AND DRUMMED STOCKS DOWN OVERLAND BY ROAD TRANSPORT. LOSS OF THE REMAINING BERTHING FACILITY WOULD PROHIBIT RESUPPLY BY BARGE OR COASTAL TANKER.

THE SEVERELY REDUCED STORAGE CAPACITY AND PROBABLE DAMAGE TO THE SUPPORT FACILITIES AND EXPOSED PIPELINES ARE BELIEVED TO HAVE RENDERED THIS FACILITY OF LOCAL SIGNIFICANCE ONLY. EVIDENCE OF CLEANUP ACTIVITIES IS APPARENT, BUT THERE ARE NO INDICATIONS OF THE RESTORATION OF DAMAGED TANKS.

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X-A24

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25X1

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R-218/66

PHU QUI PETROLEUM PRODUCTS STORAGE
JCS-51.16

WG372250
UTM COORDINATES

25X1A

1913N 10521E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS TARGET AREA IS LOCATED 0.7 NM SW OF PHU QUI AND 38 NM NW OF VINH. THE FACILITY WAS TO BE ONE OF THE LARGER POL STORAGE FACILITIES IN NORTH VIETNAM. AT TIME OF STRIKE IT WAS NEARING COMPLETION AND WOULD HAVE CONTAINED 9 CYLINDRICAL, STEEL TANKS WITH A POTENTIAL CAPACITY OF 9,000 MT.

THREE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND NO ADDITIONAL SITES WITHIN AN 18 - 30 NM RADIUS. THERE ARE 4 IDENTIFIED ACTIVE AAA SITES CONSISTING OF 5 UNOCCUPIED 57MM/85MM REVETMENTS AND 12 OCCUPIED 37MM REVETMENTS. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

DESTRUCTION OF THE FACILITY WILL DENY A SIGNIFICANT POL SUPPLY POINT FOR THE SOUTHERN REGIONS OF THE DRV AND REQUIRE RESUPPLY FROM OTHER SOURCES.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE SEVERAL MONTHS OR POSSIBLY A MUCH LONGER TIME. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT IS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PROVIDE ALL THE NECESSARY ELEMENTS IN LESS THAN 4 WEEKS.

BOMB DAMAGE ASSESSMENT

THE TARGET AREA WAS STRUCK TWICE IN MAY 1965. THE LATEST STRIKE, ON 12 JULY 1966, WAS CONDUCTED BY 3 USN AIRCRAFT. ORDNANCE EXPENDED CONSISTED OF 10/500#GP AND 4/1000#GP BOMBS.

OF THE 9 ORIGINAL TANKS 2 WERE DESTROYED, 6 DAMAGED, AND 1 POSSIBLY DAMAGED. ALL 16 BUILDINGS WERE DESTROYED.

ALTHOUGH THE TARGET AREA APPEARS TO HAVE BEEN CLEANED UP, NO EVIDENCE OF REPAIR OR RECONSTRUCTION OF THE STORAGE TANKS IS VISIBLE. THE FACILITY APPEARS TO BE ABANDONED AND IS THEREFORE OF NO CURRENT SIGNIFICANCE.

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R-218/66

HA NOI/GIA LAM AIRFIELD POL STORAGE AREA

WJ921266
UTM COORDINATES

25X1A

2102N 10553E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS POL STORAGE AREA IS AT THE NW END OF A SECONDARY RUNWAY. IT CONTAINS 4 REVETTED VERTICAL STORAGE TANKS, OF WHICH 3 ARE [REDACTED] IN DIAMETER AND 1 IS [REDACTED] IN DIAMETER; 2 HORIZONTAL TANKS, OF WHICH 1 IS 10' X 30' AND 1 [REDACTED] AND 14 BUNKERED HORIZONTAL TANKS. IT HAS A CAPACITY OF 850 MT.

25X1

FIFTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 26 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY WITHIN 3 NM OF THE TARGET INCLUDES 17 ACTIVE AAA SITES CONSISTING OF 85 OCCUPIED 57MM/85MM REVETMENTS AND 19 OCCUPIED 37MM REVETMENTS. THERE ARE 7 INACTIVE SITES IN THE IMMEDIATE AREA, AND A TOTAL OF 55 ACTIVE SITES IN THE ENTIRE HA NOI COMPLEX. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST LOW-LEVEL AIRCRAFT.

DAMAGE OBJECTIVE IS TO DESTROY ABOVEGROUND SUPPORT FACILITIES AND UNDERGROUND POL STORAGE. DAMAGE CRITERION IS RUPTURE OF POL STORAGE TANKS. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY PROBABLY COULD BE ATTAINED WITHIN 10 - 15 DAYS. NORTH VIETNAM IS NOT KNOWN TO BE MANUFACTURING TANK COMPONENTS, APPROPRIATE STEEL TUBING, PIPING, PUMPS, OR OTHER ITEMS BASIC TO THE CONSTRUCTION OR MAINTENANCE OF POL STORAGE FACILITIES. THE EXISTING RELIANCE ON IMPORTED MATERIALS AND SKILLS IS EXPECTED TO CONTINUE INDEFINITELY. ALTHOUGH PREFABRICATED TANKS OF SOVIET DESIGN CAN BE INSTALLED AT A PREPARED SITE IN ABOUT A WEEK, IT APPEARS UNLIKELY THAT EITHER THE SOVIETS OR THE COMMUNIST CHINESE COULD PLACE ALL THE NECESSARY ELEMENTS TOGETHER IN LESS THAN 4 WEEKS.

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CATEGORY B.
DISPERSED STORAGE AREAS

**X
B**

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25X1C

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25X1A

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Van Lung Petroleum Products Storage UG	X-B3
Van Lung Petroleum Products Storage West UG	X-B5
Hoang Mai POL Storage Area	X-B7
Ha Noi Petroleum Products Thi Cam	X-B9
Bai Thuong Petroleum Products Storage UG Southeast	X-B11
Son La Petroleum Products Storage	X-B13
Thuong Thon Petroleum Products Storage UG	X-B15
Ngoc Son Petroleum Products Storage PUG	X-B17
Thai Lai Petroleum Products Storage	X-B19
Yen Hau Petroleum Products Storage PUG	X-B21
Thanh Lang Petroleum Products Storage PUG	X-B23
Ha Noi Petroleum Products Storage UG Thanh Liet (Area 1)	X-B25
Ha Noi Petroleum Products Storage UG Thanh Liet (Area 2)	X-B27
Bang So Petroleum Products Storage PUG	X-B29
Son Chau Petroleum Products Storage PUG	X-B31
Kep Petroleum Products Storage (JCS-51.18)	X-B33
Ha Noi Petroleum Products Storage Duc Noi (Area 1)	X-B35
Ha Noi Petroleum Products Storage Duc Noi (Area 2)	X-B37
Ha Noi Petroleum Products Storage Duc Noi (Area 3)	X-B39
Ha Noi Petroleum Products Storage Duc Noi (Area 4)	X-B41
Cu Van Petroleum Products Storage	X-B43
Cu Van Petroleum Products Storage East UG	X-B45
Dao Quan Petroleum Products Storage East	X-B47
Dao Quan Petroleum Products Storage West	X-B49
Nam Dinh Petroleum Products Storage PUG	X-B51
Tung Tu Petroleum Products Storage UG	X-B53
Phuc Yen Airfield POL Storage Area 1	X-B55
Phuc Yen Airfield POL Storage Area 2	X-B57
Xom Duong Quan Petroleum Products Storage UG East	X-B59
Xom Duong Quan Petroleum Products Storage UG	X-B61

~~SECRET~~

25X1 25X1C

25X1

25X1C

SECRET

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

R-218/66

THAI NGUYEN PETROLEUM PRODUCTS PARTLY UNDERGROUND SOUTH

25X1A

WJ877956
UTM COORDINATES2139N 10550E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 4.1 NM NORTH OF THAI NGUYEN AND 0.8 NM EAST OF VAN HAO. IT CONSISTS OF 2 SITES. ONE SITE CONTAINS 80 BUNKERED TANKS, 14 OPEN EXCAVATIONS, AND MORE THAN 4,000 DRUMS. (THE SECOND SITE WAS PARTIALLY OBSCURED BY SMOKE AND ONLY 12 OPEN EXCAVATIONS WERE DISCERNIBLE.) ESTIMATED CAPACITY OF THE AREA IS 1,760 MT (960 MT TANK, 800 MT DRUM).

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 10 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE THAI NGUYEN AREA INCLUDES 11 ACTIVE AAA SITES CONSISTING OF 83 OCCUPIED 57MM/85MM REVETMENTS. IN ADDITION, THERE ARE 7 INACTIVE SITES AND 3 DUMMY 57MM/85MM/-100MM SITES. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9
25X1C~~SECRET~~

VAN LUNG PETROLEUM PRODUCTS STORAGE UNDERGROUND

R-218/66

WJ388594
UTM COORDINATES

25X1A

2120N 10522E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 0.5 NM SSW OF VAN LUNG AND 0.1 NM NORTH OF ROUTE 2 AND THE HA NOI - LAO CAI RAIL LINE. IT CONTAINS AT LEAST 28 BURIED TANKS AND APPROXIMATELY 80 DRUMS IN OPEN STORAGE WITHIN A LOOP ROAD. ESTIMATED CAPACITY OF THE AREA IS 352 MT (336 MT TANK, 16 MT DRUM). THE AREA IS CONNECTED TO ROUTE 2 BY A SECONDARY ROAD.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWELVE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 11 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 12 ACTIVE AAA SITES CONSISTING OF 56 OCCUPIED 57MM/85MM REVETMENTS AND 22 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 2 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B3

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

~~SECRET~~[REDACTED]
VAN LUNG PETROLEUM PRODUCTS STORAGE WEST UNDERGROUND

R-218/66

WJ379593
UTM COORDINATES

25X1A

2120N 10521E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.9 NM SSW OF VAN LUNG AND 0.2 NM SOUTH OF ROUTE 2 AND THE HA NOI - LAO CAI RAIL LINE. IT CONSISTS OF 7 BUNKER-ED POL TANKS AND 1 EMPTY EXCAVATION IN AN OPEN FIELD. ESTIMATED CAPACITY OF THE SITE IS 84 MT. THE AREA IS CONNECTED TO ROUTE 2 BY A SECONDARY ROAD.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWELVE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 11 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 12 ACTIVE AAA SITES CONSISTING OF 56 OCCUPIED 57MM/85MM REVETMENTS AND 22 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 2 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B5

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

SECRET

R-218/66

HOANG MAI POL STORAGE AREA

25X1A

XJ148499
UTM COORDINATES

2114N 10606E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 0.5 NM WEST OF HOANG MAI AND 0.1 NM WEST OF ROUTE 1A AND THE HA NOI - PING-HSIANG RAIL LINE. IT CONSISTS OF 3 EARTH-COVERED MOUNDS, EACH WITH 3 BURIED TANKS, AND 8 EARTH-COVERED MOUNDS, EACH WITH BURIED TANKS. ESTIMATED CAPACITY OF THE SITE IS 300 MT. THE SITE IS ROAD SERVED AND FENCE SECURED.

THE AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

EIGHTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 29 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 12 ACTIVE AAA SITES CONSISTING OF 14 OCCUPIED 57MM/85MM REVETMENTS AND 45 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 5 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B7

25X1 25X1C

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~~SECRET~~

HA NOI PETROLEUM PRODUCTS THI CAM

R-218/66

25X1A

WJ791254
UTM COORDINATES

2101N 10545E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE SITE IS 4.5 NM WEST OF HA NOI AND 0.5 NM SE OF THI CAM, ON A TRIBUTARY OF THE RED RIVER. IT CONTAINS AT LEAST 1,500 DRUMS WITH A CAPACITY OF APPROXIMATELY 300 MT DISPERSED IN A WOODED AREA ALONG A SECONDARY ROAD, AND 14 PROBABLY BUNKERED TANKS WITH A CAPACITY OF 168 MT ALONG 2 LOOP ROADS IMMEDIATELY WEST OF THE DRUM STORAGE.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVENTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 17 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 8 ACTIVE AAA SITES CONSISTING OF 7 OCCUPIED 100MM REVETMENTS, 20 OCCUPIED 57MM/85MM REVETMENTS, AND 21 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 13 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C X-B9
Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

~~SECRET~~

25X1

25X1

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9
25X1C

SECRET

BAI THUONG PETROLEUM PRODUCTS STORAGE UNDERGROUND SOUTHEAST

R-218/66

25X1A

WG436952
UTM COORDINATES

1951N 10525E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 4.2 NM SW OF BAI THUONG AIRFIELD AND 3.2 NM SE OF BAI THUONG. IT CONSISTS OF APPROXIMATELY 110 TANKS BURIED NEXT TO 3 LOOP ROADS, 60 UNBURIED TANKS, AND 7 OPEN EXCAVATIONS. ESTIMATED CAPACITY OF THE AREA IS 2,040 MT.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND LOCAL CONSUMPTION.

THREE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 8 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE BAI THUONG AREA INCLUDES 9 ACTIVE AAA SITES CONSISTING OF 23 OCCUPIED 57MM/85MM REVETMENTS AND 24 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 5 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B11

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

SECRET

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SON LA PETROLEUM PRODUCTS STORAGE

R-218/66

25X1A

UJ910549
UTM COORDINATES

2117N 10356E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE SITE IS 2.8 NM SE OF SON LA AND IMMEDIATELY SOUTH OF ROUTE 6. IT CONTAINS 32 PARTIALLY BURIED HORIZONTAL TANKS, WITH AN ESTIMATED CAPACITY OF 384 MT. THE FACILITY IS SECURED BY FENCE.

THE SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR FOR LOCAL CONSUMPTION.

NO SAM SITES HAVE BEEN IDENTIFIED WITHIN 30 NM OF THE TARGET. IDENTIFIED AAA ACTIVITY IN THE SON LA AREA INCLUDES 6 ACTIVE AAA SITES CONSISTING OF 25 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 3 INACTIVE SITES IN THE AREA. SPARSE TO MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS ON SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B13

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1C

R-218/66

THUONG THON PETROLEUM PRODUCTS STORAGE UNDERGROUND

WH704984

25X1A

2047N 10540E

UTM COORDINATES

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED AREA IS 0.2 NM SW OF THUONG THON AND 23 NM SSW OF HA NOI. IT CONSISTS OF 38 BURIED POL TANKS, 24 EXCAVATIONS, AND 11 POL DRUMS. THE ESTIMATED CAPACITY OF THE AREA IS 456 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 19 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE TO MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS, BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B15

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

NGOC SON PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

R-218/66

25X1A

WE746497
UTM COORDINATES

1832N 10542E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 8 NM SSE OF VINH AND 1 NM ESE OF NGOC SON. IT CONTAINS 25 BURIED TANKS, 2 TANKS IN OPEN EXCAVATIONS, 2 UN-BURIED TANKS, 13 OPEN EXCAVATIONS, AND 24 POL DRUMS ALONG A 1-NM SECTION OF ROUTE 1A. ESTIMATED CAPACITY OF THE AREA IS 348 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 3 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIR-CRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B17

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

25X1C

~~SECRET~~

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

THAI LAI PEAK PRODUCTS STORAGE

R-218/66

XJ684143

UTM COORDINATES

25X1A

2055N 10637E

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.3 NM SE OF THAI LAI AND 5.4 NM NW OF HAI PHONG, ALONG THE NORTH BANK OF THE CUA CAM (RIVER). IT CONTAINS 10 POL TANKS AND 10 EXCAVATIONS FOR TANKS. ESTIMATED CAPACITY OF THE AREA IS 120 MT.

THE AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND LOCAL CONSUMPTION.

TWENTY-TWO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 15 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 5 ACTIVE AAA SITES CONSISTING OF 40 OCCUPIED 57MM/85MM REVETMENTS. SPARSE TO MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B19

~~SECRET~~

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

~~SECRET~~

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

YEN HAU PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

R-218/66

25X1A

WG593166
UTM COORDINATES

1908N 10534E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS ABOUT 0.5 NM NNW OF YEN HAU, 0.3 NM EAST OF ROUTE 116, AND 4 NM EAST OF ROUTE 1A. IT CONTAINS 50 BURIED TANKS WITH A CAPACITY OF 600 MT, AND APPROXIMATELY 2,000 DRUMS WITH A CAPACITY OF 400 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 1 ADDITIONAL SAM SITE HAS BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS ON SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B21

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

~~SECRET~~

R-218/66

THANH LANG PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

25X1A

XJ676195
UTM COORDINATES2058N 10636E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.3 NM NNE OF THANH LANG AND 8 NM NW OF HAI PHONG. IT CONTAINS 32 BURIED TANKS LIGHTLY OVERGROWN WITH VEGETATION, 5 UNBURIED TANKS, AND APPROXIMATELY 3,000 DRUMS. ESTIMATED CAPACITY OF THE AREA IS 444 MT IN TANKS AND 600 MT IN DRUMS.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWENTY-TWO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 15 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B23

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~~SECRET~~

25X1

25X1C

HA NOI PETROLEUM PRODUCTS STORAGE UNDERGROUND THANH LIET (AREA 1) R-218/66

25X1A

WJ846182
UTM COORDINATES

2057N 10548E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 1 OF 2 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX [REDACTED]. THE COMPLEX IS ABOUT 0.3 NM WNW OF THANH LIET AND ABOUT 4 NM SSW OF HA NOI. THE AREA CONSISTS OF 30 BURIED TANKS, 13 ABOVEGROUND TANKS, 2 EXCAVATIONS FOR TANKS, AND 1 POL TRUCK WITH A TOTAL ESTIMATED CAPACITY OF 516 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVENTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 21 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 65 OCCUPIED 57MM/85MM REVETMENTS AND 22 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 9 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS, BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B25

25X1C

25X1

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

HA NOI PETROLEUM PRODUCTS STORAGE UNDERGROUND THANH LIET (AREA 2)

R-218/66

25X1A

WJ843191
UTM COORDINATES2058N 10548E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

25X1A

THIS ROAD-SERVED STORAGE AREA IS 1 OF 2 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX. THE COMPLEX IS ABOUT 0.7 NM NW OF THANH LIET AND 3.6 NM SSW OF HA NOI. THIS AREA CONTAINS 2 BURIED POL TANKS, 8 ABOVEGROUND TANKS, AND 24 EXCAVATIONS FOR TANKS; TOTAL ESTIMATED CAPACITY IS 120 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVENTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 21 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 65 OCCUPIED 57MM/85MM REVETMENTS AND 22 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 9 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS, BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIAL IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B27

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

BANG SO PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

R-218/66

25X1A

WJ932103
UTM COORDINATES2053N 10553E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.3 NM EAST OF BANG SO AND 9 NM SSE OF HA NOI, ON THE WEST BANK OF THE RED RIVER. IT CONTAINS 6 LARGE POL TANKS, 7 PROBABLY BURIED POL TANKS, AND 17 EXCAVATIONS FOR TANKS. ESTIMATED CAPACITY OF THE AREA IS 234 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWELVE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 23 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE TO MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-P29

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

SECRET

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9
25X1C

R-218/66

SON CHAU PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

25X1A

WE761351
UTM COORDINATES

1918N 10543E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 0.7 NM SOUTH OF SON CHAU AND IMMEDIATELY WEST OF ROUTE 1A AND THE THANH HOA - VINH RAIL LINE. PRE-STRIKE PHOTOGRAPHY OF [REDACTED] REVEALS 32 BURIED TANKS, 18 UNBURIED TANKS, AND APPROXIMATELY 600 DRUMS. ESTIMATED CAPACITY OF THE SITE IS 336 MT. THE FACILITY IS SERVED BY RAIL AND ROAD.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

NO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET; HOWEVER, 4 SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 1 ACTIVE AAA SITE CONSISTING OF 4 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 3 INACTIVE SITES IN THE AREA. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

BOMB DAMAGE ASSESSMENT

THE TARGET WAS STRUCK 10 TIMES IN APRIL AND MAY 1966, THE LAST TIME ON 11 MAY. THESE STRIKES INVOLVED A TOTAL OF 60 USN AIRCRAFT WHICH EXPENDED 6/1000#GP BOMBS, 123/500#GP BOMBS, 155/250#GP BOMBS, 247/2.75" ROCKETS, AND 32 ZUNIS.

THE AIR STRIKES INTERDICTED THE RAILROAD SIDING IN AT LEAST 2 PLACES AND HEAVILY CRATERED THE DISPERSAL AREA ESTIMATED TO CONTAIN THE POL. HOWEVER, THIS DISPERSED AREA SHOWED NO EVIDENCE OF SECONDARY EXPLOSIONS. CURRENT PHOTOGRAPHY [REDACTED] SHOWS AT LEAST 24 BURIED TANKS, 4 UNBURIED TANKS, AND 4 EXCAVATIONS REMAINING.

ANY DESTROYED POL IN SUCH A DISPERSED AREA CAN BE REPLACED IMMEDIATELY IF SO DESIRED. THE INTERDICTED RAILROAD SIDING CAN BE REPAIRED WITHIN 8 HOURS.

PREPARED BY DIA PRODUCTION CENTER

X-B31

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

~~SECRET~~
 Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

[REDACTED]
 KEP PETROLEUM PRODUCTS STORAGE
 JCS-51.18

P-218/66

25X1A

2123N 10618E

XJ359660
 UTM COORDINATES

[REDACTED]
 GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THE TARGET IS 1.7 NM SE OF KEP. THE ROAD-SERVED FACILITY CONTAINS 119 BURIED TANKS AND 1 UNBURIED TANK. THE TANKS ARE INDIVIDUALLY MOUNDED OVER, LEAVING VENTS AND FILLER PIPES EXPOSED. THE FENCED AREA ALSO CONTAINS AT LEAST 3,500 DRUMS.

THIS FACILITY, WITH AN ESTIMATED CAPACITY OF 2,140 MT (1,440 MT IN TANKS AND 700 MT IN DRUMS), COULD SERVE THE AIRFIELD AT KEP OR VIETNAMESE GROUND FORCES IN THE AREA. THE TARGET IS LESS THAN 2 MILES FROM THE RAIL LINE CONNECTING THE CHINESE TRANSSHIPMENT FACILITY AT PING-HSIANG WITH HA NOI AND COULD SERVE AS A SMALL RESERVE BASE.

THERE ARE 14 IDENTIFIED SAM SITES WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THIS TARGET. ADDITIONALLY, THERE ARE 15 SAM SITES WITHIN AN 18 - 30 NM RADIUS. NO AAA DEFENSE ACTIVITY HAS BEEN IDENTIFIED IN THE IMMEDIATE VICINITY OF THIS TARGET; HOWEVER, THERE ARE 24 ACTIVE SITES IN THE GENERAL KEP AREA (66 OCCUPIED 37MM AND 84 OCCUPIED 57MM/85MM REVETMENTS). THERE ARE ALSO 6 INACTIVE AAA SITES IN THE KEP AREA. MODERATE AW AND GROUND FIRE COULD BE ANTICIPATED, SINCE THERE ARE AT LEAST 2 ACTIVE MILITARY BARRACKS INSTALLATIONS IN THE KEP AREA.

DAMAGE OBJECTIVE IS DESTRUCTION OF STORED POL. DAMAGE CRITERION IS RUPTURE OF STORAGE TANKS AND DISTORTION OF EXPOSED PIPING AND EQUIPMENT. FIRING OF SPILLED CONTENTS WILL ENHANCE DISABILITY.

DESTRUCTION OF THIS FACILITY AND THE STOCKS ON HAND WOULD NOT CRITICALLY AFFECT THE NORTH VIETNAMESE. LOSS OF THE TANKS THEMSELVES WOULD PROBABLY BE THE MOST SERIOUS RESULT, AND REROUTING OF SUPPLIES WOULD BE REQUIRED.

RESTORATION OF THE TARGET COULD BE ACCOMPLISHED VERY SOON, AS THE FACILITIES ARE NOT FIXED. RECOVERY TIME WOULD DEPEND ON THE AVAILABILITY OF SMALL TANKS TO REPLACE THOSE DAMAGED AND ON THE INCLINATION OF THE VIETNAMESE TO CONTINUE USE OF THE AREA FOR THIS PURPOSE.

PREPARED BY DIA PRODUCTION CENTER

X-R33

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

~~SECRET~~

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1C

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 1)

R-218/66

WJ907360
UTM COORDINATES

25X1A

2107N 10552E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 1 OF 4 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX. THE COMPLEX IS ABOUT 0.7 NM SSW OF DUC NOI AND 6.3 NM NORTH OF HA NOI. THIS AREA CONSISTS OF 14 LARGE BURIED TANKS, 9 PROBABLY STANDARD BURIED TANKS, AN EXCAVATION FOR AN ADDITIONAL TANK, APPROXIMATELY 3,000/30-GALLON DRUMS, AND 1,750/55-GALLON DRUMS. TOTAL CAPACITY AMOUNTS TO 458 MT IN TANKS AND 650 MT IN DRUMS. THE AREA IS SERVED BY SECONDARY ROADS.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVE AND/OR LOCAL DISTRIBUTION.

TWENTY SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 26 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 49 OCCUPIED 57MM/85MM REVETMENTS AND 24 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 6 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B35

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 2)

25X1A

WJ906362
UTM COORDINATES2107N 10552E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 1 OF 4 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX. THE COMPLEX IS ABOUT 0.7 NM SSW OF DUC NOI AND 6.4 NM NORTH OF HA NOI. THIS AREA CONSISTS OF 7 LARGE TANKS AND 23 STANDARD-SIZE TANKS, BOTH BURIED AND UNBURIED, WITH EXCAVATIONS FOR 7 LARGE AND 6 STANDARD-SIZE ADDITIONAL TANKS. TOTAL CAPACITY AMOUNTS TO 451 MT. THE AREA IS SERVED BY SECONDARY ROADS.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVE AND/OR LOCAL DISTRIBUTION.

TWENTY SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 26 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 49 OCCUPIED 57MM/85MM REVETMENTS AND 24 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 6 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

X-B37

SECRET

25X1

25X1 Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

R-218/66

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 3)

WJ902366
UTM COORDINATES

25X1A

2107N 10552E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 1 OF 4 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX. THE COMPLEX IS ABOUT 0.6 NM SW OF DUC NOI AND 6.6 NM NORTH OF HA NOI. THIS AREA CONSISTS OF 25 UNDERGROUND TANKS WITH A TOTAL CAPACITY OF 300 MT. IT IS SERVED BY SECONDARY ROADS.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWENTY SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 26 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 49 OCCUPIED 57MM/85MM REVETMENTS, AND 24 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 6 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B39

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1C

25X1

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

HA NOI PETROLEUM PRODUCTS STORAGE DUC NOI (AREA 4)

R-218/66

WJ897357
UTM COORDINATES

25X1A

2107N 10551E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS STORAGE AREA IS 1 OF 4 AREAS COLLOCATED AS A SINGLE TARGET COMPLEX. THE COMPLEX IS ABOUT 1.2 NM SW OF DUC NOI AND 6.1 NM NORTH OF HA NOI. THIS AREA CONSISTS OF 6 BURIED TANKS AND 5 EXCAVATIONS. TOTAL CAPACITY AMOUNTS TO 72 MT. IT IS SERVED BY SECONDARY ROADS.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVE AND/OR LOCAL DISTRIBUTION.

TWENTY SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 26 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 14 ACTIVE AAA SITES CONSISTING OF 14 OCCUPIED 57MM/85MM REVETMENTS AND 24 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 6 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B41

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

CU VAN PETROLEUM PRODUCTS STORAGE

R-218/66

25X1A

WJ754908
UTM COORDINATES2137N 10543E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS STORAGE SITE IS 1 NM SSW OF CU VAN AND 7.1 NM NW OF THAI NGUYEN. IT CONTAINS 94 BURIED HORIZONTAL POL TANKS WITH A TOTAL CAPACITY OF ABOUT 1,128 MT. SECONDARY ROADS CONNECT THIS SITE TO ROUTE 13A AND TO THAI NGUYEN.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM BELIEVED TO BE UTILIZED FOR STRATEGIC RESERVE AND LOCAL CONSUMPTION.

SEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 16 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE EXISTING RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B43

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

CU VAN PETROLEUM PRODUCTS STORAGE EAST UNDERGROUND

R-218/66

25X1A

WJ774926
UTM COORDINATES2138N 10544E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.6 NM EAST OF CU VAN AND 6.2 NM NW OF THAI NGUYEN. IT CONTAINS 45 UNDERGROUND TANKS WITH A CAPACITY OF APPROXIMATELY 540 MT.

THE AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 16 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. THERE IS NO IDENTIFIED AAA ACTIVITY IN THE VICINITY OF THIS TARGET. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C

X-B45

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

25X1

25X1

25X10 Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

R-218/66

DAO QUAN PETROLEUM PRODUCTS STORAGE EAST

25X1A

XJ249708
UTM COORDINATES2126N 10612E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 0.1 NM EAST OF DAO QUAN, ON THE SOUTH BANK OF SONG THUONG (RIVER). IT CONSISTS OF 28 BURIED TANKS, 6 CAMOUFLAGED ABOVEGROUND TANKS, 3 TANKS VISIBLE IN EXCAVATIONS, AND 1 OPEN EXCAVATION. ESTIMATED CAPACITY OF THE SITE IS 444 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TWELVE SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 12 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE NEARBY KEP AREA INCLUDES 25 ACTIVE AAA SITES CONSISTING OF 92 OCCUPIED 57MM/85MM REVETMENTS AND 66 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 5 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

25X1C X-847
Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

25X1

25X1

25X1C

SECRET

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

DAO QUAN PETROLEUM PRODUCTS STORAGE WEST

R-218/66

XJ240696

25X1A

2125N 10611E

UTM COORDINATES

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS STORAGE SITE IS ABOUT 0.8 NM SSW OF DAO QUAN, ABOUT HALFWAY BETWEEN HA NOI AND THAI NGUYEN. IT CONTAINS 30 BUNKERED HORIZONTAL POL TANKS IN A SQUARE PATTERN WITH A TOTAL CAPACITY OF 360 MT. THIS SITE IS SERVED BY SECONDARY ROADS.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVE AND/OR LOCAL CONSUMPTION.

ELEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 22 ADDITIONAL SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE NEARBY KEP AREA INCLUDES 25 ACTIVE AAA SITES CONSISTING OF 92 OCCUPIED 57MM/85MM REVETMENTS AND 66 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 5 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE EXISTING RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B49

25X1C

Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

25X1

R-218/66

NAM DINH PETROLEUM PRODUCTS STORAGE PARTLY UNDERGROUND

XH273612
UTM COORDINATES

25X1A

2026N 10613E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 3 NM NE OF NAM DINH, ON THE WEST BANK OF THE RED RIVER. IT CONSISTS OF 22 BURIED POL TANKS, WITH A TOTAL CAPACITY OF 264 MT, ON BOTH SIDES OF A LOOP ROAD.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SEVEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 16 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE NAM DINH AREA INCLUDES 11 ACTIVE AAA SITES CONSISTING OF 58 OCCUPIED 57MM/85MM REVETMENTS AND 6 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 8 INACTIVE SITES IN THE AREA. MODERATE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE 2 - 3 WEEKS, WITH MATERIALS ON HAND. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

PREPARED BY DIA PRODUCTION CENTER

X-B51

25X1

25X1C Approved For Release 2003/08/04 : CIA-RDP78B04560A005500010027-9

SECRET

TUNG TU PETROLEUM

STORAGE UNDERGROUND

R-218/66

WJ889767

25X1A

UTM COORDINATES

2129N 10551E

GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE SITE IS 6 NM SOUTH OF THAI NGUYEN AND 1 NM WEST OF ROUTE 3. IT CONTAINS 22 BUNKERS, EACH WITH AT LEAST 5 BURIED TANKS, DISPERSED AMONG SEVERAL SMALL HILLS. BUNKERS ARE PARTIALLY CONCEALED BY VEGETATION. ESTIMATED CAPACITY OF THE SITE IS 1,320 MT.

THIS SITE IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

TEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 21 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE AREA INCLUDES 2 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 57MM/85MM REVETMENTS. IN ADDITION, THERE ARE 5 INACTIVE SITES AND A DUMMY 57MM/85MM SITE IN THE AREA. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

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PHUC YEN AIRFIELD POL STORAGE AREA 1

R-218/66

25X1A

WJ849517
UTM COORDINATES2116N 10549E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 2.9 NM NORTH OF PHUC YEN AIRFIELD. IT CONSISTS OF 3 BUNKERS, EACH PROBABLY CONTAINING 5 TANKS, AND 5 TANKS IN OPEN EXCAVATIONS. ESTIMATED CAPACITY OF THE SITE IS 240 MT.

THE AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SIXTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 30 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE PHUC YEN AREA INCLUDES 15 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 100MM REVETMENTS, 47 OCCUPIED 57MM/85MM REVETMENTS, AND 25 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 12 INACTIVE SITES IN THE AREA. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

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PHUC YEN AIRFIELD POL STORAGE AREA 2

R-218/66

25X1A

WJ862506
UTM COORDINATES

2115N 10549E
GEOGRAPHIC COORDINATES

PRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 2.4 NM NNE OF PHUC YEN AIRFIELD AND 1 NM SW OF PHUC YEN PETROLEUM PRODUCTS STORAGE NNE UNDERGROUND. THE AREA CONTAINS 4 BUNKERS, EACH WITH 5 TANKS. ESTIMATED CAPACITY OF THE SITE IS 240 MT.

THE AREA IS PART OF THE DISPERSED STORAGE SYSTEM UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

SIXTEEN SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET, AND 27 ADDITIONAL SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE PHUC YEN AREA INCLUDES 15 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 100MM REVETMENTS, 47 OCCUPIED 57MM/85MM REVETMENTS, AND 25 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 12 INACTIVE SITES IN THE AREA. MODERATE TO INTENSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

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XOM DUONG QUAN PETROLEUM PRODUCTS STORAGE UNDERGROUND EAST

25X1A

WE919764
UTM COORDINATES1752N 10552E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS 1.2 NM EAST OF XOM MA LAU, ON BOTH SIDES OF ROUTE 101. IT CONSISTS OF 5 EMPTY EXCAVATIONS WITH AN ESTIMATED POTENTIAL CAPACITY OF 72 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

NO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET; HOWEVER, 2 SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 4 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 7 INACTIVE SITES IN THE AREA. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THE TARGET TO FULL, PRE-STRIKE CAPABILITY WOULD REQUIRE ABOUT 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENTS. THE PRESENT RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

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XOM DUONG QUAN PETROLEUM PRODUCTS STORAGE UNDERGROUND

R-218/66

WE895768
UTM COORDINATES

25X1A

1752N 10550E
GEOGRAPHIC COORDINATESPRE-STRIKE TARGET DESCRIPTION

THIS ROAD-SERVED STORAGE AREA IS NORTH AND SOUTH OF XOM MA LAU, ON BOTH SIDES OF ROUTE 101. IT CONSISTS OF 6 EMPTY EXCAVATIONS AND 6 BURIED TANKS IN A WOODED AREA. ESTIMATED CAPACITY OF THE AREA IS 72 MT.

THIS AREA IS PART OF THE DISPERSED STORAGE SYSTEM WHICH IS UTILIZED FOR STRATEGIC RESERVES AND/OR LOCAL CONSUMPTION.

NO SAM SITES HAVE BEEN IDENTIFIED WITHIN SA-2 MISSILE RANGE (17.5 NM) OF THE TARGET; HOWEVER, 3 SAM SITES HAVE BEEN IDENTIFIED WITHIN AN 18 - 30 NM RADIUS. IDENTIFIED AAA ACTIVITY IN THE TARGET AREA INCLUDES 4 ACTIVE AAA SITES CONSISTING OF 16 OCCUPIED 37MM REVETMENTS. IN ADDITION, THERE ARE 7 INACTIVE SITES IN THE AREA. SPARSE HMG AND SMALL ARMS FIRE IS ANTICIPATED AGAINST AIRCRAFT.

RESTORATION OF THIS TARGET TO FULL, PRE-STRIKE CAPACITY WOULD REQUIRE APPROXIMATELY 2 - 3 WEEKS, WITH MATERIALS AT THE SITE. NORTH VIETNAM IS PRESENTLY FABRICATING SMALL, HORIZONTAL TANKS BUT MUST IMPORT THE VARIOUS COMPONENT PARTS. RELIANCE ON IMPORTED MATERIALS IS EXPECTED TO CONTINUE INDEFINITELY.

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DIA AND CIA ANNEX

ANNEX
II

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INTRODUCTION

In accordance with standard practices of the petroleum industry, capacities in all categories of this annex are expressed in terms of metric tons at the rate of one metric ton for each cubic meter of volume. A cubic meter of water (about 265 US gallons) weighs one metric ton. A cubic meter of petroleum generally weighs less than one metric ton, the exact weight depending upon the specific gravity of the particular type of petroleum. A specific gravity of 0.84 may be used to estimate the weight of a cubic meter of average petroleum; thus, one cubic meter of average petroleum would weigh 0.84 metric tons. Capacities shown in this annex are gross. Because of "deadwood" inside tanks, (e.g., the space occupied by pipes, manholes, and internal structural supports, and space left to preclude spillage at or near the tops of tanks), the actual and safe capacity may be about 95 percent of gross capacity.

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ANNEX II

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	Installation Name	Capacity	
		MT Water	MT POL
	Viet Tri Petroleum Products Storage	1,670	1,400
	Phuc Yen Airfield POL Storage Area	4,200	3,530
	Phuc Yen Petroleum Products Storage NNE UG	11,800	9,910
	Ha Noi Petroleum Products Storage Thanh Am	36,453	30,620
	Nguyen Khe Petroleum Products Storage	8,925	7,500
	Bac Giang Petroleum Products Storage	2,330	1,960
	Nam Dinh Petroleum Products Storage	13,120	11,021
	Hai Phong Petroleum Products Storage	47,925	40,260
	Duong Nham Petroleum Products Storage UG	4,920	4,133
	Do Son Petroleum Storage	3,400	2,856
	Phu Van POL Storage	1,000	840
	Vinh Petroleum Products Storage	14,325	12,033
	Phu Qui Petroleum Products Storage	9,000	7,560
	Ha Noi/Gia Lam Airfield POL Storage Area	850	714
	Thai Nguyen Petroleum Products PUG South	1,760	1,478
	Van Lung Petroleum Products Storage UG	352	295
	Van Lung Petroleum Products Storage West UG	84	71
	Hoang Mai POL Storage Area	300	252
	Ha Noi Petroleum Products Thi Cam	468	393
	Bai Thuong Petroleum Products Storage UG Southeast	2,040	1,714
	Son La Petroleum Products Storage	384	323
	Thuong Thon Petroleum Products Storage UG	456	383
	Ngoc Son Petroleum Products Storage PUG	348	292
	Thai Lai Petroleum Products Storage	120	101
	Yen Hau Petroleum Products Storage PUG	1,000	840
	Thanh Lang Petroleum Products Storage PUG	1,044	877
	Ha Noi Petroleum Products Storage UG Thanh Liet (Area 1)	516	433
	Ha Noi Petroleum Products Storage UG Thanh Liet (Area 2)	120	101
	Bang So Petroleum Products Storage PUG	234	197
	Son Chau Petroleum Products Storage PUG	336	282
	Kep Petroleum Products Storage	2,140	1,797
	Ha Noi Petroleum Products Storage Duc Noi (Area 1)	1,108	931
	Ha Noi Petroleum Products Storage Duc Noi (Area 2)	451	379
	Ha Noi Petroleum Products Storage Duc Noi (Area 3)	300	252
	Ha Noi Petroleum Products Storage Duc Noi (Area 4)	72	60

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ANNEX II (Continued)

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BE No.

Installation Name

Capacity

MT Water	MT POL
1,128	948
540	454
444	373
360	302
264	222
1,320	1,109
240	202
240	202
72	60
72	60

Cu Van Petroleum Products Storage
Cu Van Petroleum Products Storage East UG
Dao Quan Petroleum Products Storage East
Dao Quan Petroleum Products Storage West
Nam Dinh Petroleum Products Storage PUG
Tung Tu Petroleum Products Storage UG
Phuc Yen Airfield POL Storage Area 1
Phuc Yen Airfield POL Storage Area 2
Xom Duong Quan Petroleum Products Storage UG East
Xom Duong Quan Petroleum Products Storage UG

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Vinh Petroleum Products Storage	1840N 10543E	A23, A24, X-A23
Ky Tran POL Storage Area	1847N 10540E	C1, C2
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Ha Noi Petroleum Products Storage UG Thanh Liet (Area 2)	2058N 10548E	B27, B28, X-B27
Nam Dinh Petroleum Products Storage	2024N 10610E	A13, A14, X-A13
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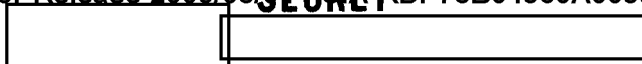
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6 September 1966

The two attached TABLE OF CONTENTS FOR CATEGORY B will replace the corresponding pages in NPIC/R-218/66, Southeast Asia Activity Report, POL Facilities, North Vietnam, disseminated with the covering memo dated 30 August 1966.

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Excluded from automatic
downgrading and declassification

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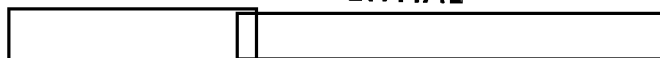
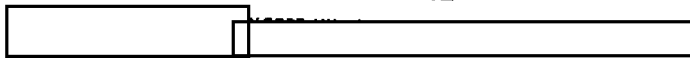
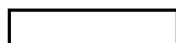


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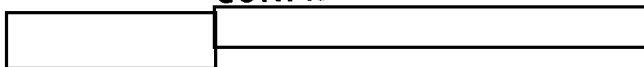


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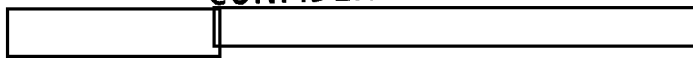


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Ninh Giang Petroleum Products Storage	X-B81
Viet Yen Petroleum Products Storage	X-B83
Kep Ha Petroleum Products Storage	X-B85
Tien Hoi Petroleum Products Storage	X-B87
Dong Mai Petroleum Products Storage	X-B89
Xom Lang POL Storage	X-B91
Van Hoa POL Storage	X-B93
Phu Lo Petroleum Products Storage NNE Underground	X-B95
Jaune Island POL Storage	X-B97
Co Nhue Hoang POL Storage	X-B99
Quang Suoi Petroleum Products Storage	X-B101

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